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ABSTRACT

Information on the supply of new college graduates seeking home economics-related positions, home economics job openings, and projected levels of employment is presented. Based on a Department of Agriculture manpower assessment project, supply and demand relationships through 1990 were analyzed, and supply data were aggregated by 11 educational clusters. Study results indicate that current and projected supplies of graduates do not appear to equal employment demands. At the bachelor's and master's levels, additional graduates appear to be needed to satisfy the employment demand for design, manufacturing, and processing specialists and for marketing, merchandising, and sales personnel. At the master's level, administrators are also needed. Degree specialists that appear to be in greatest demand at the bachelor's and master's levels include business, family/consumer resource management, food service management and institutional management, food science and human nutrition, human environment and shelter, and textiles and clothing. The supply of doctoral graduates is estimated to be inadequate across the full spectrum of home economics specialists. Information is presented on the sources of data, the research methodology, and occupational clusters and degree programs at all levels, including the associate degree level. In addition to extensive statistical data, a bibliography is included. (SW)

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Graduates of Higher Education in the Food and Agricultural Sciences:

An Analysis of Supply/Demand Relationships

Volume II—Home Economics

Kyle Jane Coulter
and
Marge Stanton

U S DEPARTMENT OF HEALTH
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"Graduates of Higher Education in the Food and Agricultural Sciences: An Analysis of Supply/Demand Relationships, Volume II--Home Economics" is a companion report to Volume I which addressed the fields of agriculture, natural resources, and veterinary medicine. Both reports were prepared by the Office of Higher Education, Science and Education Administration (SEA), U.S. Department of Agriculture (USDA). Kyle Jane Coulter, Deputy Assistant Director, Office of Higher Education, is coordinator of the SEA Manpower Assessment Project which served as the basis for these reports.

Several professional organizations provided recommendations for conducting the project. Foremost among these were the Association of Administrators of Home Economics (AAHE), the American Home Economics Association (AHEA), and the National Council of Administrators of Home Economics (NCAHE). These same organizations appointed representatives to serve as a panel of consultants to the project coordinator. AAHE appointed Virginia Caples, Jane Lillestol, Helen McHugh, and Gwen Cooke; AHEA, Lura Odland; and NCAHE, Marjorie Rankin. Additional members of the panel of consultants were Pat Swann, representing SEA-Human Nutrition, and Norma Bobbitt, representing home economics higher education at-large.

Within USDA, many individuals contributed to the project. Administrative support was provided by Anson R. Bertrand, Director, Science and Education; Homer C. Folks, who was Assistant Director, Higher Education, SEA, when this project was started; and Lark Carter, who is currently serving as Assistant Director, Higher Education, SEA. Josefina Lago and Marge Stanton, Communications and Data Services Division, SEA, were responsible for analyzing the data pertaining to the supply of graduates of higher education in home economics. Dennis Clark, Carl Potter, Duncan de Graffenreid, and Reggie Walker, also with that division, provided technical assistance in processing various data. Jane Hart and Cheryl Cohen, Higher Education, SEA, provided clerical assistance. Deborah Gerald, National Center for Education Statistics, helped prepare projections for future graduates in home economics. Alex Sinaiko, U.S. Department of Defense (DOD), Defense Manpower Data Center; Bertha King, U.S. Department of Education (DOED), Office of Consumer and Home Economics Education; and William Graybeal, National Education Association, helped provide data not available within the primary data bases used in the project.

Data used in the project were made available by the AHEA; AAHE; DOED, Office of Consumer and Home Economics Education and the National Center for Education Statistics; U.S. Department of Labor, Bureau of Labor Statistics; DOD; National Education Association; and SEA-Extension. A USDA-SEA funded Clemson University project, directed by Stephen R. Chapman and Edward L. McLean, collected and analyzed the data for teaching and research faculty employment in higher education.

Program Resources, Inc. (PRI), developed the overall project design, identified and processed the employment demand data, computed supply projections, and helped prepare the final report. Representing PRI were David Lipstein, David Mixer, Jane Burgess, J. Ahluwalia, and Trish Carrico.

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Executive Summary

Purposes

This study was conducted for the purpose of assessing the extent to which higher education in home economics is producing sufficient graduates to complement the needs of the labor force. In addition, the study was undertaken to provide information about employment opportunities for new entrants into the labor force who possess higher education in home economics.

Overview of the Methodology

Relative to these purposes cited, an analysis was conducted of supply/demand relationships through 1990, based on identification of the number of graduates qualified for employment in home-economics-related positions and occupational employment demands

Information on the supply of higher education graduates was obtained principally from the Higher Education General Information Surveys administered by the National Center for Education Statistics. The only exception was for data pertaining to baccalaureate, master's and doctoral graduates in home economics education; these data were acquired from the Office of Consumer and Home Economics Education, U.S. Department of Education, and from the Association of Administrators of Home Economics.

Occupational employment demand information was obtained primarily through the Occupational Employment Statistics Program of the Bureau of Labor Statistics (BLS), U.S. Department of Labor. In addition to BLS data, USDA data were used to assess employment demand in the Cooperative Extension Services, and a USDA-funded study by Clemson University provided data on college and university teaching and research faculty employment.

The supply data are aggregated by 11 educational clusters: General Home Economics; Business; Family and Community Services; Family/Consumer Resource Management; Food Service Management and Institutional Management; Food Science and Human Nutrition; Home Economics Communications; Home Economics Education; Human Environment and Shelter; Individual and Family Development; and Textiles and Clothing. Seven occupational clusters are used to aggregate and present employment demand data: Administrators and Managers; Design, Manufacturing, and Processing Specialists; Marketing, Merchandising, and Sales Personnel; Media Specialists; Scientific and Professional Specialists; Service Specialists; and Educators.

Throughout the study, a panel of consultants representing the Association of Administrators of Home Economics, the National Council of Administrators of Home Economics, the American Home Economics Association, and SEA-USDA provided suggestions and guidance. This panel afforded the necessary expertise to overcome the inherent limitations due to the paucity of existing data, as well as the inconsistent and incompatible data classification systems of the different information bases. Without such expertise, the development of a single analytical model would not have been possible.

Summary Conclusions

Results of the study indicate several imbalances in the supply of and demand for graduates of higher education in home economics throughout the eighties. At the baccalaureate level, additional graduates appear to be needed to satisfy the employment demand for Design, Manufacturing, and Processing Specialists and for Marketing, Merchandising, and Sales Personnel. Degree specializations

which appear to be in greatest demand include Business, Family/Consumer Resource Management, Food Service Management and Institutional Management, Food Science and Human Nutrition, Human Environment and Shelter, and Textiles and Clothing.

With regard to graduates at the master's level, shortages are projected for occupational employment related to Administrators and Managers; Marketing, Merchandising, and Sales Personnel; Scientific and Professional Specialists; and Design, Manufacturing, and Processing Specialists. Again, those degree specializations which appear to be in greatest demand are Business, Family/Consumer Resource Management, Food Science and Human Nutrition, Food Service Management and Institutional Management, Human Environment and Shelter, and Textiles and Clothing.

The supply of doctoral graduates is estimated to be inadequate across the full spectrum of home economics specialities. The limited number of doctoral graduates projected through 1990 is substantially exceeded by the employment demand for Administrators and Managers; Design, Manufacturing, and Processing Specialists; Educators (college and university faculty and Extension personnel); Scientific and Professional Specialists; and Service Specialists.

Stimulating the future growth of household oriented business and industry, developing the human resources potential of individuals and families to improve their quality of life, and achieving individual and family stability and security depend on a continuing supply of home economics professionals. In essence, home economics graduates are uniquely capable of applying technical expertise specific to sustaining and enhancing individual and family quality of life throughout a myriad of educational, governmental, and industrial programs, agencies, and units. In the highly industrialized society of the United States, this technical expertise is critical to effectively using the vast amounts of information being generated, to selecting from an increasingly larger number of choices, to coping with rampant change, and to effecting mutually beneficial family-environment interface. The projected shortages of higher education graduates with expertise in home economics will restrict progress toward national priorities and goals associated with improving the quality of life for individuals and families.

Limitations

This report is based on the first phase of a continuing, comprehensive analysis of the nationwide supply/demand for graduates of higher education in the food and agricultural sciences. For brevity, the report presents supply information pertaining to degrees conferred by all institutions. Data which denote the supply of graduates by type of institution (for example, land-grant or nonland-grant university) have been analyzed and are on file in the SEA Office of Higher Education.

No single, comprehensive data base exists for analyzing supply and demand components of the home economics labor force. Therefore, the project used an innovative, experimental methodology to develop the following estimates: Percent of graduates of the various degree specializations qualified for home economics and related employment, percent of workers in given occupations who possess higher education in home economics and related fields, and percent distribution of graduates of various degree specializations among the seven occupational clusters established for the study. Future studies should serve to refine and validate the research design.

Graduates of Higher Education in the Food and Agricultural Sciences:

An Analysis of Supply/Demand Relationships

Volume II—Home Economics

CHAPTER I
Introduction

This report examines the number of graduates of higher education in home economics in relation to employment demand throughout the home economics professions during the eighties. It also considers graduates of fields related to home economics, since they often are qualified and compete for comparable employment.

This is the second report of a series based on a study made by the Office of Higher Education, Science and Education Administration (SEA), U.S. Department of Agriculture (USDA), in response to the Food and Agriculture Act of 1977 (Public Law 95-113). Title XIV, Subtitle B, Section 1405, of Public Law 95-113 states:

> The Department of Agriculture is designated as the lead agency of the Federal Government for agriculture research,...extension. and teaching in the food and agricultural sciences, and the Secretary, in carrying out the Secretary's responsibilities shall...keep informed of developments in, and the Nation's need for research, extension, teaching, and manpower development in the food and agricultural sciences and represent such need in deliberations within the Department of Agriculture, elsewhere within the executive branch of the United States Government, and with the several states designated land-grant colleges and universities, agricultural and related industries, and other interested institutions and groups.

The purposes of the overall study were (1) to determine the types of occupational employment which require expertise in a food/agricultural science and the extent to which the Nation's higher education system is producing the specific types

of graduates required by the labor force and (2) to identify current and projected employment opportunities for graduates of higher education programs in the food and agricultural sciences, including agriculture and natural resources, forestry, veterinary medicine, and home economics. Findings that describe the supply/demand relationships for graduates in agriculture, natural resources, and veterinary medicine were published in the first report in July 1980 as "Graduates of Higher Education in the Food and Agricultural Sciences: An Analysis of Supply/Demand Relationships, Volume 1--Agriculture, Natural Resources, and Veterinary Medicine" (USDA Miscellaneous Publication Number 1385).

The following definitions were used in assessing supply/demand for graduates of higher education in home economics:

Food and agricultural sciences--Academic programs concerned with the production, processing, marketing, distribution, conservation, consumption, research, and development of food and agriculture related products and services, inclusive of programs in natural resources, forestry, veterinary medicine, and home economics.

Graduates of higher education--Current and projected recipients of associate, baccalaureate, master's, or doctoral degrees in home economics and related fields awarded by any accredited public or private institution of higher (post-secondary) education.

Home economics--The broad field of academic disciplines which integrates the principles of the basic sciences, humanities, and arts and relates them to problems faced by individuals, families, and communities. The thrust of home economics as a professional and academic discipline consists of five major objectives:[1/]

*To improve the conditions contributing to individual/family psychological and social development.

*To improve the conditions contributing to individual/family physiological health and development.

*To improve the physical components of the individual/family's near environment.

*To improve individual and family consumer competence and resource use.

*To improve the quality and availability of community services which enrich individual/family life.

Employment opportunities--Current and projected levels of employment, as well as projected average annual job openings in those occupations related to the broad spectrum of home economics-related positions.

Labor supply--New graduates of higher education programs who are qualified for and are seeking employment in home economics-related positions.

Labor demand--Employment demand (job openings) related to home economics expertise created by industry growth and employee separations from the labor force because of death, disability, retirement, or personal reasons.

1/*"National Goals and Guidelines for Research in Home Economics," by Association of Administrators of Home Economics. Bulletin Office, Michigan State University, East Lansing, Michigan, 1970.*

Purpose of Report

If the United States is to continue as a lead nation in the world, a vital national goal must be to enable families to effectively and efficiently care for and promote the development of individual members. Attainment of this national goal is impeded by such stresses as economic uncertainty and inflation, energy resource depletion, urbanization and inadequate housing, changing marital patterns and conflicts, and evolving roles of women. Additionally, special needs of the population are being identified relative to dietary and nutritional status, consumer safety and welfare, parenting and child care, aging, physical disability, learning disability, and preventive health care.

As the United States endeavors to ameliorate these stresses and to strive toward progress in meeting needs of special segments of the population, it must possess the requisite human capital. One essential type of expertise needed is acquired through higher education in the broad range of disciplines comprising home economics.

Colleges and universities concerned with producing sufficient expertise in the home economics disciplines must have access to sound information for educational planning, administration, and evaluation. Of primary importance is an information base indicating current and projected numbers of graduates of the specializations comprising home economics. A second critical information base is one depicting occupational employment opportunities for graduates of higher education in home economics. A synthesis of such information can then serve as a frame of reference for--

*Identifying those academic disciplines which appear to warrant increased attention and support predicated on stable or expanding employment opportunities which exceed the number of qualified graduates.

*Identifying these academic disciplines which are producing an adequate number of graduates to complement stable or declining labor-market requirements.

Methodology

Overview

The methodology used for this study entailed a quantitative assessment of the supply of and demand for new graduates of higher education qualified for employment related to home economics. The outline in chart 1 summarizes the design for the study. The outline addresses the review of existing data bases, the selection of appropriate data bases, and the collection of new data. In addition, the outline illustrates the manner in which the expert opinion of a panel of consultants was used to synthesize the various data into a single analytic model.

Assumptions

Current and projected supply/demand estimates were developed. The projected estimates were predicated on the following basic assumptions:

1. Assumptions for projecting the 1989/90 supply of home economics and related graduates of higher education as developed by the National Center for Education Statistics, U.S. Department of Education (formerly part of the U.S. Department of Health, Education, and Welfare) are that--

a. Trends in graduation rates will not change drastically from late in the seventies through the projected period, despite a decline in the college-age population and the propensity of older age groups to participate in the education process. Graduation rates may begin to decline toward the end of the decade.

b. Values placed on an education will not alter significantly during the projected period.

2. Assumptions for projecting the average annual demand through 1990 for home economics and related graduates of higher education as developed by the Bureau of Labor Statistics (BLS), U.S. Department of Labor, are that[2/]--

a. The institutional framework of the U.S. economy will not change radically through the projected period.

b. Current sociological, technological, and scientific trends will continue through the projected period, including values placed on work, education, income, and leisure.

c. The economy should gradually recover from the higher unemployment levels of the seventies and reach nearly full employment (defined as an employment rate of 4 percent). Although a higher productivity will occur by 1990 from that experienced late in the seventies, the economy will not return to the level of production it would have attained had growth and productivity remained at the 1955-68 rate.

d. Inflation will decline at a relatively slow rate. Higher prices for energy will not act as a constraint on economic growth. However, at the industry level, the mix of fuels used to meet energy needs is projected to change and thus affect requirements.

e. Trends in the occupational structure of industries will not be altered radically by changes in relative wages, technology, or other factors.

f. A moderate growth of Government expenditures will occur through the projected period.

g. The growth rate of the gross national product (GNP) will be influenced by the slower expansion of the labor

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2/ *"Employment Projections for the 1980's." Bulletin 2030, Bureau of Labor Statistics, U.S. Department of Labor, 1979.*

Chart 1

Outline of the selection, evaluation, and interpretation of data relating supply of and demand for graduates of higher education in home economics.

Data sources reviewed

American Home Economics Association
Association of Administrators of Home Economics
National Education Administration
National Science Foundation
U.S. Department of Agriculture
U.S. Department of Defense
U.S. Department of Education
U.S. Department of Health, Education and Welfare (now Health and Human Services)
U.S. Department of Labor

Data sources selected

Primary sources

Earned Degrees and Other Formal Awards Conferred, Higher Education General Information Surveys, National Center for Education Statistics, DOED (page 8)
Industry-Occupation Census-Based Matrix, Occupational Employment Statistics Program, Bureau of Labor Statistics, DOL (page 12)

Other sources

American Home Economics Association (master's and doctoral degrees conferred in home economics education)
Office of Consumer and Home Economics Education, DOED (baccalaureate degrees conferred in home economics education)
Manpower Data Center, DOD (table 46)
Master Personnel File, Cooperative Extension Services, USDA (appendix 17)
Office of Research, National Education Association (community college demand for home economics faculty)

Data collected

Higher Education Faculty Employment in Home Economics, Clemson University study (tables 39 and 45)

Data evaluation, integration, and synthesis by panel of consultants

Selection of HEGIS degree specializations leading to expertise in home economics (appendix 2)
Estimation of percent of graduates by degree level and field qualified for home economics employment (appendix 2)
Categorization of degree specializations by 11 educational clusters (appendix 3)
Selection of OES census-based occupations and industries employing expertise in home economics (appendixes 6 and 7)
Estimation of percent of workers, in each selected occupation and industry, possessing higher education in home economics (page 9)
Categorization of occupations by seven clusters (page 15)
Estimation of percent of graduates of each educational cluster employable within each occupational cluster (appendix 9)

Results

Current and projected average annual supply of graduates of selected home economics and related degree specializations for all institutions by degree level categorized by educational cluster (appendix 4)
Estimated number of home economics and related workers in selected occupations and industries (tables 3, 9, 15, 21, 27, 33, and 39)
Estimated average annual job openings for home economics occupations through 1990 (tables 3, 9, 15, 21, 27, 33, and 39)
Supply/demand relationships between occupational and educational clusters by degree level (charts 2, 3, and 4)
Additional information on employment demand for home economics and related graduates—military (table 46)
Future directions (pages 93-94)

force. A changing distribution of GNP by sector and industry will reflect the changing age-composition of the population.

Some of the stated basic assumptions underlining the study may appear to be questionable in light of current developments. Because the primary data bases used in the project reflect such assumptions, the findings of the study pertaining to projected labor supply/demand should be interpreted accordingly.

Sources of Data

To the maximum extent possible, the project used existing data bases available through agencies of the Federal Government. Information on the supply of higher education graduates was obtained principally from the Higher Education General Information Surveys (HEGIS), a series of annual and periodic data collection instruments administered by the National Center for Education Statistics. The particular data collection component of HEGIS used was the survey of "Earned Degrees and Other Formal Awards Conferred." This survey collects information from each institution of higher education on the number of degrees conferred by degree specialization and is the most comprehensive source of data covering the output of higher education programs.

Occupational demand information pertaining to potential employment opportunities was obtained through the Occupational Employment Statistics (OES) Program of BLS. One of the components of OES is the Industry-Occupation (I-O) census-based matrix. In addition to the decennial census, the matrix data are based on many sources including BLS's Current Employment Statistics program and Current Population Survey program. The matrix provides employment data cross-classified by industry and occupation and is developed for a base year (current year) and for a projection year. Along with occupational rates for job separations because of death, retirements, and other factors, the employment matrices are used to estimate average annual job openings by occupation. (In this study, demand data are reported by calendar year, which is used by the census and BLS. Supply data are reported by academic year, such as the year 1977/78.)

In addition to the HEGIS degrees-conferred survey and the OES census-based matrix, several other sources of information were used in the project. This supplementary information was important in filling gaps in the primary data bases and included the following:

*A USDA-supported survey conducted by Clemson University to assess faculty employment in home economics across all institutions of higher education granting baccalaureate or higher degrees.

*The SEA master personnel file of the Cooperative Extension Services.

*The Association of Administrators of Home Economics (AAHE) data on graduates with advanced degrees in home economics education.

*The Office of Consumer and Home Economics Education, U.S. Department of Education, estimates of graduates with a baccalaureate degree in home economics education.

*The U.S. Department of Defense data on the number of military and civilian personnel in the Armed Services in duty positions deemed likely to require home economics and related expertise.

*The National Education Association estimates on employment opportunities for junior college faculty.

Panel of Consultants

Synthesizing the data from the various sources of information into a single analytic model was constrained because of (1) significant differences in the various occupational and educational taxonomies used to classify data from the individual sources and (2) the limited set of data pertaining specifically to the home economics related labor force. To overcome these limitations, the use of expert opinion in assessing the relevance of information from a single source was a virtual necessity.

Throughout the project, a panel of consultants representing the Association of Administrators of Home Economics, the National Council of Administrators of Home Economics, the American Home Economics Association, and USDA-SEA provided suggestions and guidance. Appendix 1 lists the members of the panel of consultants. The concensus from this panel of consultants was used in developing estimates for several aspects of the study, including--

*Estimates of the percent of graduates from the various academic degree specializations qualified for employment in home economics-related occupations (appendix 2). The estimates developed were based on available enrollment and degrees conferred statistics and on knowledge of the curriculums associated with the various academic degree specializations. Also, the estimates were based on the assumption that the percent of graduates with the different degree specializations qualified for home economics employment will remain constant through the projected period.

*Estimates of the percent of employed workers in specific occupational fields within various industrial sectors that possess higher education in home economics and related fields. Percent estimates were based on analysis of current occupational employment data and on knowledge of the skills and tasks required in each occupational field. Further, the percent estimates were based on the assumption that the relative relationship of home economics employment in an occupation to total employment in that occupation will remain constant through the projected period, except for employment of secondary teachers of home economics.

*Estimates of the percent of graduates of educational clusters representative of the disciplines comprising home economics as distributed among occupational clusters established for purposes of the study. Appendix 9 provides the estimates derived from a synthesis of the various sources of education placement information.

In essence, the panel of consultants provided the necessary expertise to develop a single analytic model integrating several sources of data.

Identification of the Supply of Higher Education Graduates Qualified for Home Economics Occupations

The current supply of workers for an occupation at a given time consists of persons currently employed in that occupation, plus unemployed persons who are available and actively seeking work in that occupation. In reality, the supply of workers for a specific occupation is not a static concept; rather, it is a dynamic one in which workers are continually moving into and out of the labor force for a specific occupation. The projected supply of workers for an occupation in a given future time period is the current occupational supply, plus new entrants

minus separations because of death, retirement, occupational transfer, or geographic migration. Expected new entrants for an occupation may come from one of several sources, including--

*Unemployed persons.

*Educational institution graduates.

*Occupational transfers

*Geographic in-migrants.

*Labor force new entrants or re-entrants.

These sources of new entrants to the labor supply for a specific occupation are not mutually exclusive. For example, a graduate of an educational institution may relocate to a different geographic area (and, hence, be a geographic in-migrant). The graduate also may be a new entrant to the labor force. These concepts of labor supply for an occupation constrain efforts to develop an analytical model of the supply of qualified workers for defined occupational fields.

For the purposes of this project, labor supply was deemed to be new associate,[3] baccalaureate, master's, and doctoral graduates of higher education programs who are qualified for and seeking employment in home economics-related occupations. The following steps were used to assess the current and future supplies of graduates:

1. Use of the Higher Education General Information Survey (HEGIS)--The HEGIS was used to identify current (academic year 1977/78) and projected (1989/90) numbers of higher education graduates in home economics and related fields. HEGIS is a series of annual and periodic surveys conducted by the National Center for Education Statistics (NCES), U.S. Department of Education (previously in the U.S. Department of Health, Education, and Welfare). HEGIS data are collected from all accredited public and private colleges and universities granting associate or higher degrees.[4] The results of this data collection process provide comprehensive figures classifying students of higher education degree programs by level of degree, discipline division, and degree specialization. Furthermore, graduates of each degree specialization are aggregated by sex. As of 1975, HEGIS initiated the collection of racial and ethnic characteristics of graduates on a biennial basis.

The classifications of academic divisions and degree specializations are presented in "A Taxonomy of Instructional Programs in Higher Education," published by the National Center for Education Statistics. The HEGIS taxonomy classifies the degrees into two sections. Conventional academic subdivisions of knowledge and training are contained in Section I, and relate to baccalaureate and higher degree levels. Section II contains technological and occupational specialities which relate to curriculums leading to associate degrees and other awards below the baccalaureate level.

These two sections are divided into

[3] *Two-year associate degrees in home economics and related fields granted by senior colleges and universities and by junior and community colleges; supply was deemed to consist of 90 percent of nontransferable-degree recipients plus 75 percent of transferable-degree recipients.*

[4] *Inclusive of junior colleges and community colleges granting two-year associate degrees in home economics and related fields.*

academic divisions which are divided further into degree specializations. As an example of the structure of the taxonomy, Home Economics represents a Section I academic division, and Food and Nutrition represents a degree specialization within this division; Natural Science Technologies represents a Section II academic division, and Home Economics Technologies represents a degree specialization.

HEGIS has been producing data since the sixties. Hence, an historical set of data exists. NCES uses these historical data to project the number of future graduates of higher education.

2. Selection of degrees representative of the food and agricultural sciences--Although HEGIS provides a comprehensive, standard set of academic degrees data, not all of the graduates receiving the degrees are qualified for, nor desirous of, employment requiring expertise in home economics. To determine relevant academic degrees, the project's panel of consultants identified those degree specializations directed toward producing expertise in home economics. The panel selected 49 HEGIS degrees for which all or some of the graduates are deemed qualified for jobs requiring home economics expertise. For each degree specialization selected, the panel estimated also the percent of graduates at each degree level (associate, baccalaureate, master's, and doctoral) qualified for employment related to home economics. Appendix 2 presents the degree specializations selected and the percent estimates of the panel.

Using both the home economics degrees and the home economics-related degrees leading to similar expertise, the panel next defined 11 educational clusters for the purpose of aggregating the degree specializations. The clusters group similar degree specializations according to educational emphasis and are as follows:

*General Home Economics (cluster 1).

*Business (cluster 2).

*Family and Community Services (cluster 3).

*Family/Consumer Resource Management (cluster 4).

*Food Service Management and Institutional Management (cluster 5).

*Food Science and Human Nutrition (cluster 6).

*Home Economics Communications (cluster 7).

*Home Economics Education (cluster 8).

*Human Environment and Shelter (cluster 9).

*Individual and Family Development (cluster 10).

*Textiles and Clothing (cluster 11).

For each of the 11 educational clusters, degree specializations were assigned to either the home economics or the home economics-related component of the cluster. Appendix 3 summarizes the assignment of HEGIS to educational clusters.

In certain instances, a HEGIS degree provides graduates for multiple educational clusters. Recipients of such degrees were divided among the appropriate educational clusters. For example, 50 percent of the Applied Design graduates were included in the Human Environment and Shelter cluster and the remaining 50 percent were included in the Textiles and Clothing cluster.

Appendix 4 summarizes the 1977/78 and projected 1989/90 supply of graduates, deemed qualified for home economics and related employment opportunities, by type of degree, degree level, and educational cluster.

3. Adjustment of HEGIS data to accommodate the allocation of general degrees to degree specializations--Each of the major academic divisions in the HEGIS taxonomy includes a degree specialization designated as general. The consensus of the panel of consultants was that students reported as recipients of a general degree frequently earn a specific degree specialization. Yet, because of limited capabilities of institutional reporting systems, these degree specializations are recorded as general degrees. To adjust HEGIS data to more accurately reflect the actual specializations for which degrees were conferred, the panel estimated the percent of such degrees that were in reality generalist degrees. The remainder of the general degrees were distributed across the specific degree specializations within the appropriate academic divisions.

As an example of this procedure, reference is made to the Home Economics academic division (1300) of the HEGIS taxonomy. The panel of consultants determined that 10 percent of baccalaureate degrees, 12 percent of master's degrees, and 2 percent of doctoral degrees conferred in General Home Economics (1301) were in reality generalist degrees. The remaining General Home Economics degrees were distributed proportionately among the other degree specializations within the Home Economics academic division. Appendix 5 summarizes the percent factors determined by the panel of consultants for the number of general degrees considered to be legitimate general degrees.

4. Projections of higher education graduates--In developing the supply projections for graduates in home economics and related fields qualified for employment in home economics occupations, several procedures were followed. The initial procedure was the acquisition of HEGIS degree projections from the National Center for Education Statistics. These projections are available by level, sex, and academic division through an ongoing program at NCES.

Projections of degrees produced by NCES are based on the "Earned Degrees Conferred" reports from accredited institutions of higher education listed in the "Education Directory." Although these reports provide a large portion of the data, additional data and information are supplied by education and professional associations, experts in the fields, and other agencies of the Federal Government. ment.

NCES uses a College Graduate Model (CGM) which produces projections of the supply of college graduates at the baccalaureate, master's, and doctoral levels. For each sex, CGM maintains a data bank of historical time series of earned degrees conferred by level and academic division. In addition, projections of other variables (social, demographic, and economic) are internal to the model.

The supply of college graduates comes from two submodels of CGM. Specifically, the projections of degrees by level and sex are produced by the Level and Sex Submodel (LSS) and projections of degrees by academic division are produced by the Degrees by Field Submodel (DFS).

Beginning with enrollment projections by type of student (based on population and enrollment projections developed by

the Bureau of the Census), the projections of total degrees by level and sex are developed, using enrollment rates and age-specific graduation rates. Specifically, NCES projections of baccalaureate degrees are produced by projecting enrollment rates by attendance status of fourth-year college enrollment to undergraduate college enrollment. The projections of master's degrees are developed by projecting enrollment rates by attendance status of first-year graduate college enrollment to total graduate college enrollment. The age-specific projections of doctoral degrees are based jointly on the projections of enrollment rates of sixth-year college enrollment and enrollment beyond the sixth year.

Projections of these enrollment rates at the baccalaureate, master's, and doctoral levels and the projections of graduation rates at the doctoral level are primarily based on the assumption that the prevailing past trends will continue into the future. Exponential smoothing is the principal projection method used to project the enrollment and graduation rates.

The NCES projections of degrees by 20 major fields are developed by analyzing historical time series of earned degrees by sex. When available, additional variables are incorporated into the final equations. Principle projection methods include exponential smoothing and regression analysis. Final degree projections by academic division are obtained by comparing the sum of the academic division projections by level to total degrees by level. The two sets of projections are adjusted iteratively until general consistency is obtained.

For the purposes of this project, the 1988/89 numbers of graduates projected by NCES were used as initial control totals since NCES has not as yet developed projections to 1989/90. These 1988/89 projections for academic divisions were extrapolated to 1989/90 by essentially using the percentage change from 1987/88 to 1988/89 from NCES projections. The resulting 1989/90 values were used as final control totals. NCES did not provide projections of graduates by detailed degree specialization.[5/] Therefore, to develop projections for these degree specializations, historical data were acquired from NCES for each degree specialization by level and by sex. Since the projections of graduates were needed for the total of both sexes, the male and female historical data were summed by degree specialization. With the resulting series, extrapolative techniques were generally used to develop the projected values. In addition, degree specializations, which represented a relatively large share of a control academic division, were directly tied to the division's growth rate. Degree projections from other sources, expected labor market conditions, and projected demographic characteristics were also considered in the development of the degree projections. The sum of the generated individual projections by degree specialization were compared to the 1989/90 academic division totals. When a difference occurred, the specializations were forced to the final 1989/90 control totals.

The projections of graduates for the general degrees were distributed across the relevant, individual degree specializations according to the same procedures established for the analyses of historical HEGIS data. A comparison of current and projected estimates of

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[5/] *It is not the practice of NCES to project the number of graduates by specific degree specializations, because the reliability of the results cannot be substantiated.*

available graduates in home economics is presented in appendix 4. Appendix 4 does not include number of graduates considered unavailable for employment. The estimates are aggregated according to the 11 educational clusters used in the report.

5. Processing of current and historical HEGIS data--The HEGIS public distribution tapes were acquired from NCES for each academic year from 1970/71 through 1977/78. For each academic year, tabulations of the degrees conferred were generated and are filed in the Office of Higher Education, SEA, USDA, by--

*Degree level:

Associate.

Baccalaureate.

Master's.

Doctorate.

*Sex of student:

Male.

Female.

*Type of institution:

Land-grant colleges of 1862.

Land-grant colleges of 1890 and Tuskegee Institute.

All land-grant institutions.

All nonland-grant institutions.

For purposes of brevity, this report presents information pertaining only to degrees conferred in 1977/78 by all institutions.

Development of Data on the Demand for Home Economics Graduates

A comprehensive data base does not exist specific to the full spectrum of employment in home economics occupations. Therefore, this project used an innovative, experimental methodology to develop estimates of the number of workers by occupation who require higher education in home economics and related fields.[6/] The major source of employment data used was selected from the BLS Occupational Employment Statistics Program. The following is a summary of the process used to develop a major part of the occupational demand data for this project:

1. Occupational Employment Statistics (OES) Program--The OES program is a Federal/State, cooperative statistical program of the U.S. Department of Labor. It is comprised of three components.

a. Survey component--The OES survey collects employment figures by occupation from nonfarm establishments with the objective of providing current, reliable, and detailed occupational employment data. The survey is conducted by State employment security agencies over a 3-year cycle with different industries surveyed in each of the 3 years. The survey instrument used is specific to each industry surveyed. The survey component of the OES program is relatively new and had not yet produced a set of national data at the time this study was initiated. Hence, it was not feasible to consider using this particular data base.

6/ *Future replications of the study should serve to accommodate refinement and validation of the research design.*

b. Industry-Occupation Matrix component--The national matrix system produces tabular presentations of current and projected employment statistics cross-classified by industry and occupation. These national tables or matrices are based on 1970-Census-of-Population concepts and classification systems and on the OES-survey classification system. The matrix system can generate future job openings for occupations with data from a base-year matrix, a projected-year matrix, and job-separation rates developed from decennial census data and working-life tables. The national matrices have been used as tools for policy decisions as well as aids to develop State and area occupational employment projections. For purposes of this study, the census-based matrix was deemed to be the most appropriate data base available for assessing occupational employment.

c. State and Area Projections Program component--This program produces current and projected employment statistics cross-classified by industry and occupation for all States, many metropolitan areas, and other labor-market areas. The matrices may be based on the OES-survey or the OES-census classification system. The matrix-data and job-separation rates which adjust for employee deaths, retirements, disabilities, and temporary withdrawals from the labor force, yield estimated job openings by occupational field.

2. Computation of Demand Data--The following steps were taken in developing data on the demand for home economics and related graduates:

a. Selection of OES-census occupations--The consultants reviewed a complete listing of OES-census occupations. From this list they selected those occupations perceived as likely to require higher education in home economics and related fields. The list of selected OES-census occupations is presented in appendix 6.

b. Selection of OES-census industries--The consultants also reviewed a complete listing of OES-census industries and selected those industries likely to employ persons with higher education in home economics and related fields. The list of selected OES-census industries is presented in appendix 7.

c. Development of Industry-Occupation (I-O) Matrix--The industries and occupations selected by the consultants were arranged in a matrix format. All selected occupations were listed under each selected industry. An example of an I-O matrix is presented in appendix 8.

d. Estimation of percent of workers likely to possess higher education in home economics--For each industry, the consultants examined the number of workers employed in each occupation and estimated the percent deemed to possess higher education in home economics or related fields. For example, with regard to the occupation, managers, it was estimated that 5 percent in the home furnishings store industry possess higher education in home economics and related fields.

e. Multiplication of percent of workers that possess higher education in home economics by current and projected occupational employment--Occupational employment for 1978 was used as the base year and 1990 was used as the projection year for the project. The percent of workers estimated to possess home economics and related higher education was multiplied by the 1978 and 1990 employment levels.

f. Calculation of total workers in an occupation who possess higher education in home economics--The number of persons in an occupation perceived as possessing home economics and related higher education was determined by summing employment for a given occupation across all selected industries. The following example depicts the process:

OES-census occupation	1978 estimated number of workers with higher education in home economics					
	OES-census industry					All selected industries[1/]
	A	B	C	D	E	
Example of OES-census occupation	10	5	0	2	31	48

[1/] The total number of persons in the occupation who possess higher education in home economics equals 48. This calculation represents the sum of all workers across industries A-E.

The process diagrammed was carried out for 1978 and 1990 employment levels. Therefore, for each occupation used in the project, data are available on the number of persons employed in 1978 and the number of persons expected to be employed in 1990 who were estimated as possessing higher education in home economics and related fields.

g. Calculation of average annual occupational employment growth--Average annual occupational employment growth was calculated by dividing the total occupational employment growth by the number of years in the period. For example, 1978 employment for decorators and window dressers was 18,437 workers, and 1990 projected employment is 28,005 workers. So, the total growth is 28,005 minus 18,437, which equals 9,568. With 12 years in the period, the average annual growth is 797.

h. Calculation of average annual replacements--In addition to the job opportunities resulting from growth, employment opportunities also are created when currently employed persons leave their jobs. BLS has devised a methodology to estimate the number of employee-replacement opportunities that will be created as a result of employee deaths, retirements, disabilities, or temporary withdrawals from the labor force for personal reasons. The methodology uses decennial census data on the age and sex distribution of workers in an occupation and working-life tables. These data are used to calculate separation rates. The manner in which separation rates are used is shown in the following diagram.

OES-Census occupation	Estimated workers with higher education in home economics				
	1978 number	1990 number	Midyear separation rate	Midyear employment[1] number	Number of average replacements[2]
Decorators and window dressers	18,437	28,005	0.0381	23,221	884

[1] 1978 employment (18,437) plus 1990 employment (28,005) divided by 2 equals 23,221.

[2] Midyear separation rate multiplied by midyear employment.

1. Calculation of average annual openings--The total average annual openings in an occupation for persons with home economics and related higher education was calculated by adding average annual growth and average annual replacements. An example is as follows:

OES-census occupation	Average annual estimated number		
	Growth	Replacements	Total openings
Decorators and window dressers	797	884	1,681

3. Aggregation of Demand Data into Occupational Clusters--For organizational purposes, the 86 occupations used were apportioned among seven occupational clusters established by the panel of consultants. These occupational clusters are as follows:

*Administrators and Managers (cluster 1).

*Design, Manufacturing, and Processing Specialists (cluster 2).

*Marketing, Merchandising, and Sales Personnel (cluster 3).

*Media Specialists (cluster 4).

*Scientific and Professional Specialists (cluster 5).

*Service Specialists (cluster 6).

*Educators (cluster 7).

Analysis of Supply/Demand Relationships

One of the most important components of this particular study was the specification of relationships between educational programs and occupations. The relationships between degree specializations and occupational employment are complex for higher education graduates. Furthermore, little empirical information exists relative to specific placement of higher education graduates in home economics.

Placement studies which collect data on the employment of graduates provide an empirical basis for specifying relationships between degree specializations and occupations. The project consultants examined available data from the limited number of placement studies which have been conducted. This review, synthesized with professional expertise, enabled the consultants to relate degrees to occupations with the use of a matrix format. The consultants then estimated the percent of graduates from each designated educational cluster qualified for employment in each occupational cluster designated for the project. Further, estimates were determined for the percent of graduates in each educational cluster who elect not to enter the labor force. This percent was not included in estimating supply/demand relationships.

The percent distributions of graduates of educational clusters to occupational clusters established for the project are presented in appendix 9. The appendix displays the percent distributions for each degree level (nontransferable associate, transferable associate, baccalaureate, master's, and doctorate). These percent distributions were multiplied by the number of persons graduating in 1977/78 within each of the educational clusters for home economics degrees and for home economics-related degrees.

Appendix 10 presents the computations for 1977/78 graduates with home economics degrees estimated to be employed in home economics occupations. Appendix 11 presents similar computations for graduates receiving degrees related to home economics. The total supply of graduates with home economics and home economics-related degrees, as distributed by occupational cluster, is shown in appendix 12. Appendixes 13, 14, and 15 present similar computations for projected 1989/90 graduates of higher education in home economics and related fields.

Summary of Methodology

Financial and temporal constraints dictated that the study use existing data bases to the maximum extent possible. A panel of consultants was established to assess the relevance of the available data bases and to develop a framework for synthesizing the data into a single analytical model. This panel provided guidance and direction throughout the entire project.

In addition to using existing data, the study entailed the collection and use of one new data base. This data base, developed by Clemson University with USDA-SEA support, identifies current and projected numbers of faculty in higher education in home economics.

As outlined in chart 1, the following procedures were used to conduct the study:

1. Procedures for identifying the supply of higher education graduates in home economics.

   a. Selection from the HEGIS taxonomy of home economics and related degree specializations.

   b. Identification of degrees for which 100 percent of the graduates are deemed qualified for employment in home economics positions.

   c. Estimation of specific percent, by degree level, of graduates of home economics-related degrees deemed qualified for employment in home economics positions.

   d. Computation of actual numbers

of graduates with home economics and related degrees based on 1977/78-HEGIS earned-degrees-conferred data.

e. Assignment of selected HEGIS home economics degrees and related degrees to 11 educational clusters established for organizational purposes of the study; when HEGIS degree specializations appeared to produce graduates related to more than one educational cluster, graduates were divided accordingly.

2. Procedures for assessing employment demand for graduates of higher education in home economics.

a. Identification of OES-census-based industries and occupations representative of the full spectrum of employment related to home economics.

b. Estimation of the percent of workers, in each selected occupation for each selected industry, deemed to possess higher education in home economics and related fields.

c. Computation of current occupational employment and projected average annual openings.

d. Assignment of selected occupations to seven occupational clusters established specifically for organizational purposes of the study.

3. Procedures for relating supply to demand.

a. Estimation of the percent of graduates representative of each educational cluster electing not to enter the home economics labor force--return to native country, continue education, elect career in unrelated field, and so forth.

b. Estimation of the percent of graduates of each educational cluster obtaining employment within each occupational cluster.

c. Computation of supply/demand estimates.

d. Analysis and interpretation of supply/demand relationships.

The USDA-SEA overall project, serving as the basis for this report, represents the first phase of a comprehensive supply/demand analysis of graduates of higher education in the food and agricultural sciences, inclusive of home economics. Of necessity, innovative and experimental methodologies were used. Future replications of the project should help accommodate the validation and refinement of the methodological design.

CHAPTER II
Introduction to Findings

Teaching, research, and extension high-priority initiatives, identified in 1980 for home economics by a national steering committee established by USDA-SEA include--

*Family economic stability and security.

*Energy conservation and environmental tradeoffs.

*Interrelationships among food, nutrition, and health.

*Family strength and interface with the social environment.

Cumulatively, these national initiatives broadly address the full spectrum of disciplines comprising home economics and suggest requisite competencies for professionals. Attainment will depend on the capacity of institutions of higher education to produce graduates capable of generating solutions to social and family problems and issues associated with these initiatives. Additionally, graduates will play a critical role in translating and disseminating knowledge evolving from the pursuit of these initiatives.

Changing family structure and increasing awareness of social, environmental, and economic needs of the American people are further influencing professional opportunities for graduates of home economics programs. As a result, curriculums are in a dynamic state and are producing graduates with a far broader realm of expertise than those of earlier decades.

These changing conditions introduce significant difficulty in analyzing the supply of and demand for home economics graduates. One such difficulty is that employment demand, as documented by the BLS data, lacks sufficient job specificity. Numerous types of occupations are not specified in the OES census-based matrix, for example, the occupations of fashion coordinator, hospitality director, fashion designer, consumer relations specialist, household equipment consultant, residential lighting specialist, and scientific and technical writer. Rather, occupational aggregations within the BLS data base obscure jobs at an appropriate level of specificity.

A second difficulty exists because the HEGIS taxonomy of degree specializations included under the home economics academic division does not adequately reflect all of the disciplines in the broad field of home economics. For example, such specializations as consumer science, family economics, human nutritional services, human environment and housing, and gerontology are not included in the present taxonomy. The HEGIS taxonomy is currently being revised by the U.S. Department of Education. The revision should help ameliorate this difficulty.

Presentation of Findings

Estimates for the national supply of and demand for graduates of home economics higher education are organized and presented for seven occupational clusters: Administrators and Managers; Design, Manufacturing, and Processing Specialists; Marketing, Merchandising, and Sales Personnel; Media Specialists; Scientific and Professional Specialists; Service Specialists; and Educators. The following information is included for each cluster.

*Description of the nature and breadth of occupations included in the cluster.

*Summary supply data denoting current (1977/78), projected (1989/90), and average annual home economics and related graduates qualified for employment in those occupations within the cluster.

*Detailed supply data depicting current (1977/78) and projected (1989/90) home economics and related graduates of each educational cluster qualified for employment in the occupational cluster.

*Summary data identifying the 1978 level of employment and average annual openings through 1990 for each occupation within the cluster.

*Detailed employment demand data identifying employment growth and replacement needs relative to each occupation within the cluster.

*Data expressing the average annual supply of graduates as a percent of total average annual demand through 1990 by degree type and level.

*Selected examples of specific jobs as listed and as aggregated by the Bureau of the Census under those occupations comprising the cluster; extracted from "The 1970 Classified Index of Industries and Occupations," published by the Bureau of the Census, U.S. Department of Commerce.

*Narrative interpretation of employment opportunities for home economics graduates of higher education.

The presentation of findings for occupational cluster #7 (Educators) differs in format, since data on employment opportunities in the education field were obtained from several sources in addition to BLS. These sources included SEA-Extension, Clemson University's Survey of Students and Faculty in Higher Education in Home Economics, and the National Education Association.

Administrators and Managers
(Occupational Cluster #1)

Included in this cluster are occupations that require managerial and administrative competencies, as well as professional expertise in one of the disciplines comprising the broad field of home economics. All such occupations associated with government and public administration, business, industry, and social service agencies are included in the cluster. Only those in education and in the Cooperative Extension Services are excluded, since they are included in occupational cluster #7 (Educators).

Summary and detailed data denoting the supply of graduates qualified for employment as administrators and managers are presented in tables 1, 4, and 5. Summary and detailed data for employment demand in this occupational cluster are presented in tables 3 and 6. Table 2 expresses the average annual supply of graduates as a percent of total average annual demand, by degree type and level.

Table 1--Summary supply of home economics graduates qualified for employment as Administrators and Managers[1/]

Graduates	Degree level				
	Associate	Baccalaureate	Master's	Doctoral	Total
Supply of home economics graduates:					
Current, 1977/78	--	945	219	19	1,183
Projected, 1989/90	--	959	282	30	1,271
Average annual supply, 1977/90	--	952	251	24	1,227
Supply of home economics-related graduates:					
Current, 1977/78	152	1,982	461	63	2,658
Projected, 1989/90	152[2/]	2,309	460	60	2,981
Average annual supply, 1977/90	152	2,146	460	61	2,819

-- = No degree specializations selected.

[1/] Estimates represent summations of data in tables 4 and 5.
[2/] Treated as stable, since NCES projections are not computed for associate degrees.

Table 2--1977/90 average annual supply of graduates expressed as a percent of total average annual demand by degree type and level for Administrators and Managers[1/]

Type of degree	Supply/demand percent by degree level				
	Associate	Baccalaureate	Master's	Doctoral	Total
Home economics	--	13	4	<1	17
Home economics-related	2	30	6	1	40
Total	2	43	10	1	57

-- = No degree specializations selected.

[1/] Average annual supply in table 1 divided by total average annual openings in table 3.

Table 3--Summary employment demand for Administrators and Managers with higher education in home economics and related fields[1/]

Census occupation	Percent of total 1978 occupational employment[2/]	1978 level of occupational employment[3/]	1978-90 estimated average annual openings
Bank officers and financial managers	0.01	5,033	422
Managers, superintendents (buildings)	.01	2,284	332
Office managers, nec[4/]	.01	3,811	268
Officials, administrators (public administration)	.02	6,036	324
Officials of lodges, societies, and unions	.10	8,070	368
Managers and administrators, nec	1.54	93,652	5,110
Restaurant, cafeteria, bar managers	.99	6,064	291
Total		124,950	7,115

[1/] Based on OES-census-based data; detailed data are shown in table 6.

[2/] Percent equals ratio of occupational employment estimated as possessing higher education in home economics and related fields to total occupational employment.

[3/] Number of workers estimated as possessing higher education in home economics and related fields.

[4/] nec = not elsewhere classified.

Table 4--Detailed 1977/78 supply of graduates qualified for employment as Administrators and Managers[1/]

Educational cluster	Degree level					
	Associate T	Associate N	Bacca-laureate	Master's	Doctoral	Total
Supply of home economics graduates:						
General Home Economics	--	--	--	6	1	7
Business	--	--	3	1	--	4
Family/Consumer Resource Management	--	--	23	8	1	32
Food Service Management and Institution Management	--	--	265	8	0	273
Food Science and Human Nutrition	--	--	--	52	3	55
Home Economics Communications	--	--	--	0	0	0
Home Economics Education	--	--	130	25	3	158
Human Environment and Shelter	--	--	62	3	0	65
Individual and Family Development	--	--	239	97	10	346
Textiles and Clothing	--	--	223	19	1	243
Total	--	--	945	219	19	1,183
Supply of home economics-related graduates:						
Business	--	--	129	288	41	458
Family and Community Services	--	--	2	4	0	6
Family/Consumer Resource Management	--	--	25	8	1	34
Food Service Management and Institution Management	88	36	1,384	17	2	1,527
Food Science and Human Nutrition	--	--	--	37	11	48
Home Economics Communications	--	--	--	0	0	0
Home Economics Education	--	--	0	1	1	2
Human Environment and Shelter	--	--	106	16	0	122
Individual and Family Development	--	--	188	88	7	283
Textiles and Clothing	15	13	148	2	0	178
Total	103	49	1,982	461	63	2,658

-- = No degree specializations selected.
T = Transferable.
0 = No graduates reported.
N = Nontransferable.

[1/] HEGIS-based data, except for Home Economics Education which are based on the following information sources: Office of Consumer and Home Economics Education, U.S. Department of Education, and Association of Administrators of Home Economics.

Table 5--Detailed 1989/90 projected supply of graduates qualified for employment as Administrators and Managers[1/]

Educational cluster	Degree level			
	Bacca-laureate	Master's	Doctoral	Total
Supply of home economics graduates:				
General Home Economics	--	8	2	10
Business	3	1	--	4
Family/Consumer Resource Management	23	10	2	35
Food Service Management and Institutional Management	271	10	0	281
Food Science and Human Nutrition	--	69	4	73
Home Economics Communications	--	0	0	0
Home Economics Education	130	25	3	158
Human Environment and Shelter	64	4	0	68
Individual and Family Development	244	130	17	391
Textiles and Clothing	224	25	2	251
Total	959	282	30	1,271
Supply of home economics-related graduates:				
Business	159	301	38	498
Family and Community Services	2	5	0	7
Family/Consumer Resource Management	31	9	1	41
Food Service Management and Institutional Management	1,684	17	3	1,704
Food Science and Human Nutrition	--	43	11	54
Home Economics Communications	--	0	0	0
Home Economics Education	1	1	1	3
Human Environment and Shelter	114	15	0	129
Individual and Family Development	141	67	6	214
Textiles and Clothing	177	2	0	179
Total	2,309	460	60	2,829

-- = No degree specializations selected. 0 = No graduates anticipated.

[1/] Based on NCES projections.

Table 6--Detailed employment demand data for Administrators and Managers with higher education in home economics and related fields[1/]

Census occupation	1970-Census-of-Population code	Percent home economics and related employment is of total occupational employment		Number of workers with higher education in home economics and related fields		Employment growth (1978-90)	Average annual growth	Average annual replacement needs	Total average annual employment openings
		1978	1990	1978	1990				
ank officers and financial managers	202	0.01	0.01	5,033	7,852	2,819	235	187	422
anagers, superintendents (buildings)	216	.01	.02	2,284	3,583	1,299	108	224	332
ffice managers, nec[2/]	220	.01	.01	3,811	5,210	1,399	117	151	268
fficials, administrators (public administration)	222	.02	.02	6,036	6,665	629	52	272	324
fficials of lodges, unions	223	.10	.10	8,070	8,300	230	19	349	368
anagers and administrators, nec	245	1.54	1.54	93,652	107,924	14,272	1,189	3,921	5,110
staurant, cafeteria, bar managers	230	.99	1.00	6,064	6,703	639	53	238	291

1/ Developed from OES national census-based matrix data.
2/ nec = Not elsewhere classified.

Examples of Specific Jobs Representative of Selected OES-Census-Based Occupations Included in the Occupational Cluster for Administrators and Managers (Occupational Cluster #1)

1970-Census-of-Population code	Census occupation	Examples of specific jobs
202	Bank officers and financial managers	Customer representative Financial consultant Investment counselor Loan counselor Mortgage consultant Securities consultant
216	Managers, superintendents (buildings)	Apartment manager Building superintendent Housing manager Superintendent, renting, managing
220	Office managers, nec	Branch office manager Office manager
222	Officials, administrators (public administration)	Administrative analyst Administrative assistant Area supervisor Branch chief Contract administrator Contract analyst Contract negotiator Director Housing relocator Mediator Public housing manager Service director Supervisor of cottage life
223	Officials of lodges, societies, and unions	Business representative Community youth secretary County or county office director Director Director, YMCA Director, YWCA Director, casework Director, family service center Director, field service Director, group counseling program Director, professional services Director, social services District leader, Girl Scouts

1970-Census-of-Population code	Census occupation	Examples of specific jobs
	Officials of lodges, societies, and unions (Continued)	Manager, district office Manager, division Social services, manager
245	Managers and administrators, nec	Art dealer Caterer Child welfare director Community youth secretary Costume director Dean of girls Director, casework Director, community center Director, community organization Director, family service center Director, group counseling program Fashion consultant, except selling Fashion coordinator Fashion director Food broker Food supervisor Head of department Hotel manager Innkeeper Jeweler, manager Manager, banquet Manager, graphic arts, paper goods Marketing manager Manager, social services Media director Production supervisor Program arranger Program director Public welfare director Social director Social-service director Social work supervisor Style advisor Welfare administrator
230	Restaurant, cafeteria, bar managers	Cafeteria director Caterer Lunchroom supervisor Manager, hotel catering Manager, restaurant Manager, school lunch Owner Owner-manager

Interpretation of Employment Opportunities for Administrators and Managers

A review of the current and projected supply/demand for administrators and managers with expertise in home economics and related fields indicates a substantial deficiency of available professionals. As summarized in table 2, graduates should be available annually through 1990 to satisfy only 57 percent of the total employment demand for administrators and managers. Home economics graduates supply only 17 percent of the estimated total demand. Related graduates meet an additional 33 percent of the estimated total demand.

Since administrators and managers represent an upper professional stratum, entry into such positions often requires a graduate education. Yet, master's and doctoral graduates are projected to be available to meet only 11 percent of the demand. Baccalaureate graduates are projected to equal another 43 percent of demand.

BLS estimates indicate increasing employment opportunities for administrators and managers. Expansion of public housing and multifamily dwellings, food-service and lodging industries, licensed child-care, social services, residential institutions, and financial offices dealing with families and consumers should continue to influence the need for professionals with administrative management competencies and expertise in a home economics discipline throughout the decade.

Graduates of the following fields appear to be in especially short supply:

*Business Home Economics.
*Family/Consumer Resource Management.
*Food Science and Human Nutrition.
*Food Service Management and Institutional Management.
*Human Environment and Shelter.
*Textiles and Clothing.

College and university programs concerned with producing sufficient home economics graduates to assume administrative and managerial positions need to accommodate two increasingly important trends. One, students need sound academic course work which provides them with knowledge related to personnel management, organizational decisionmaking, public relations, budget and finance, labor relations, development of and response to public policy, and management information systems. Two, on-the-job experience is of increasing importance to employers. Internships, practicums, and field experiences can serve to meet this need and also help keep students abreast of current technology, trends, and issues in a field of employment.

Design, Manufacturing, and Processing Specialists (Occupational Cluster #2)

Included in this cluster are home economics-related occupations encompassing the design, manufacture, processing, quality control, and regulation of food, clothing, shelter, and related products (such as toys, household equipment, furnishings). Professionals in this area are concerned with applying new technology and knowledge to enhance product reliability and performance, to minimize production costs, and to satisfy production regulations. Cognizance of the unique purchasing wants and needs of special segments of society (for example, the disabled, elderly, ethnic groups, and single-parent families) is increasingly important for employment of this nature.

Summary and detailed data denoting the supply of graduates qualified for employment as design, manufacturing, and processing specialists are presented in tables 7, 10, and 11. Summary and detailed data for employment demand in this occupational cluster are presented in tables 9 and 12. Table 8 expresses the average annual supply of graduates as a percent of total average annual demand, by degree type and level.

Table 7--Summary supply of home economics graduates qualified for employment as Design, Manufacturing, and Processing Specialists[1/]

Graduates	Degree level				
	Associate	Baccalaureate	Master's	Doctoral	Total
Supply of home economics graduates:					
Current, 1977/78	--	1,095	264	4	1,363
Projected, 1989/90	--	1,116	351	6	1,473
Average annual supply, 1977/90	--	1,106	307	5	1,418
Supply of home economics-related graduates:					
Current, 1977/78	1,807	1,600	795	7	4,209
Projected, 1989/90	1,807[2/]	1,887	843	7	4,544
Average annual supply, 1977/90	1,807	1,744	819	7	4,376

-- = No degree specializations selected.

[1/] Estimates represent summations of data in tables 10 and 11.

[2/] Treated as stable since NCES projections are not computed for associate degrees.

Table 8--1977/90 average annual supply of graduates expressed as a percent of total average annual demand by degree type and level for Design, Manufacturing, and Processing Specialists[1/]

Type of degree	Supply/demand percent by degree level				
	Associate	Baccalaureate	Master's	Doctoral	Total
Home economics	--	15	4	<1	19
Home economics-related	24	23	11	<1	59
Total	24	38	15	<1	78

-- = No degree specializations selected.

[1/] Average annual supply in table 7 divided by total average annual openings in table 9.

Table 9--Summary employment demand for Design, Manufacturing, and Processing Specialists with higher education in home economics and related fields[1/]

Census occupation	Percent of total 1978 occupational employment[2/]	1978 level of occupational employment[3/]	1978-90 estimated average annual openings
Bakers	5.00	6,565	196
Checkers, examiners, and inspectors (manufacturing)	1.64	12,059	700
Cooks (except private household)	5.00	59,207	4,221
Cutting operatives, nec[4/]	2.71	7,107	365
Designers	5.12	8,556	371
Drafters	.43	1,262	68
Dressmakers and seamstresses (except factory)	14.36	19,910	681
Expeditors and production controllers	.40	907	49
Furriers	.50	13	1
Inspectors, nec	.17	266	12
Jewelers and watchmakers	.55	280	25
Meat cutters, butchers (except manufacturing)	1.92	3,923	101
Milliners	8.25	165	4
Miscellaneous clerical workers, nec	.07	1,091	150
Other textile operatives	1.00	1,678	39
Produce graders, packers (except factory, farm)	1.75	541	36
Sewers and stitchers	.71	5,788	359
Tailors	.63	408	26
Upholsterers	.50	295	20
Weavers	9.89	3,739	20
Total		133,760	7,444

[1/] Based on OES-census-based data; detailed data are shown in table 12.

[2/] Percent equals ratio of occupational employment estimated as possessing higher education in home economics and related fields to total occupational employment.

[3/] Number of workers estimated as possessing higher education in home economics and related fields.

[4/] nec = Not elsewhere classified.

Table 10--Detailed 1977/78 supply of graduates qualified for employment as Design, Manufacturing and Processing Specialists[1/]

Educational cluster	Degree level					
	Associate		Bacca-laureate	Master's	Doctoral	Total
	T	N				
Supply of home economics graduates:						
General Home Economics	--	--	63	--	--	63
Business	--	--	5	1	--	6
Food Service Management and Institutional Management	--	--	99	8	0	107
Food Science and Human Nutrition	--	--	232	186	2	420
Human Environment and Shelter	--	--	250	12	0	262
Textiles and Clothing	--	--	446	57	2	505
Total			1,095	264	4	1,363
Supply of home economics-related graduates:						
Business	29	26	258	576	--	889
Food Service Management and Institutional Management	1,150	574	519	17	0	2,260
Food Science & Human Nutrition	--	--	103	132	7	242
Human Environment and Shelter	--	--	424	64	--	488
Textiles and Clothing	15	13	296	6	0	330
Total	1,194	613	1,600	795	7	4,209

-- = No degree specializations selected.
T = Transferable.
0 = No graduates reported.
N = Nontransferable.

[1/] HEGIS-based data, except for Home Economics Education which are based on the following information sources: Office of Consumer and Home Economics Education, U.S. Department of Education, and Association of Administrators of Home Economics.

Table 11--Detailed 1989/90 projected supply of graduates qualified for employment as Design, Manufacturing, and Processing Specialists[1/]

Educational cluster	Degree level			
	Bacca-laureate	Master's	Doctoral	Total
Supply of home economics graduates:				
General Home Economics	65	--	--	65
Business	5	2	--	7
Food Service Management and Institutional Management	102	10	0	112
Food Science and Human Nutrition	237	247	3	487
Human Environment and Shelter	258	16	--	274
Textiles and Clothing	449	76	3	528
Total	1,116	351	6	1,473
Supply of home economics-related graduates:				
Business	318	603	--	921
Food Service Management and Institutional Management	632	17	0	649
Food Science and Human Nutrition	126	156	7	289
Human Environment and Shelter	456	60	--	516
Textiles and Clothing	355	7	0	362
Total	1,887	843	7	2,737

-- = No degree specializations selected. 0 = No graduates anticipated.

[1/] Based on NCES projections.

Table 12--Detailed employment demand data for Design, Manufacturing, and Processing Specialists with higher education in home economics and related fields[1/]

Census occupation	1970-Census-of-Population code	Percent home economics and related employment is of total occupational employment		Number of workers with higher education in home economics and related fields		Employment growth (1978-90)	Average annual growth	Average annual replacement needs	Total average annual employment openings
		1978	1990	1978	1990				
Bakers	402	5.00	4.94	6,565	6,038	-527	-43	239	196
Checkers, examiners, and inspectors (manufacturing)	610	1.64	1.73	12,059	15,714	3,655	305	395	700
Cooks (except private household)	912	5.00	5.00	59,207	77,263	17,965	1,487	2,724	4,221
Cutting operatives, nec[2/]	612	2.71	2.79	7,107	8,760	1,653	138	227	365
Designers	183	5.12	5.53	8,556	10,175	1,619	134	237	371
Drafters	152	.43	.45	1,262	1,786	524	44	24	68
Dressmakers and seamstresses (except factory)	613	14.36	12.03	19,910	13,630	-6,280	-523	1,204	681
Expeditors, and production controllers	323	.40	.40	907	1,203	296	25	24	49
Furriers	444	.50	.50	13	11	-2	0	1	1
Inspectors, nec	452	.17	.18	266	293	27	2	10	12
Jewelers and watchmakers	453	.55	.55	280	364	84	7	18	25
Meat cutters, butchers (except manufacturing)	631	1.92	1.93	3,923	3,612	-311	-26	127	101
Milliners	636	8.25	6.87	165	103	-62	-5	9	4
Miscellaneous clerical workers, nec	394	.07	.10	1,091	2,198	1,107	92	58	150
Other textile operatives	674	1.00	1.00	1,678	1,580	-98	-8	47	39
Produce graders, packers (except factory, farm)	625	1.75	1.79	541	679	138	12	24	36
Sewers and stitchers	663	.71	.66	5,788	7,015	1,227	102	257	359
Tailors	551	.63	.63	408	416	8	1	25	26
Upholsterers	563	.50	.52	295	375	80	7	13	20
Weavers	673	9.89	9.65	3,739	2,701	-1,038	-87	107	20

[1/] Developed from OES national census-based matrix data.

[2/] nec = Not elsewhere classified.

Examples of Specific Jobs Representative of Selected OES-Census-Based Occupations Included in the Occupational Cluster for Design, Manufacturing, and Processing Specialists (Occupational Cluster #2)

1970-Census-of-Population code	Census occupation	Examples of specific jobs
402	Bakers	Bread baker Cake maker Chef French pastry cook Pastry chef
610	Checkers, examiners, and inspectors (manufacturing)	Cloth inspector Drapery examiner Fruit and vegetable inspector Garment examiner Meat inspector Vegetable tester Yarn examiner
912	Cooks (except private household)	Broiler chef or cook Cafeteria cook Head cook Kitchen chef Special-diet cook
612	Cutting operatives, nec	Cleaner and trimmer Curtain cutter Lining cutter Pattern cutter Slip-cover cutter
183	Designers	Clothes designer Commercial designer Costume designer Creative designer Display artist Dress designer Fabric designer Fashion designer Furniture designer Interior designer Kitchen designer Pattern chart-writer Patternmaker Pottery-decoration designer Rug designer Stylist Textile designer Toy designer

1970-Census-of-Population code	Census occupation	Examples of specific jobs
152	Drafters	Design checker Design drafter Drafter
613	Dressmaker and seamstresses (except factory)	Alteration supervisor Custom sewer Drapery maker Dressmaker Fancy needleworker Manager, alteration department
323	Expediters and production controllers	Material analyst Production-control expediter Quality-control clerk
444	Furriers	Custom furrier Fur remodeler Furrier
452	Inspectors, nec	Cloth inspector Dining service inspector Dry goods inspector Food inspector Health inspector Meat inspector Milk inspector Sanitation inspector Upholstery inspector Taster manager Wool grader
453	Jewelers and watchmakers	Jeweler Lapidary Layout person Silversmith
631	Meat cutters and butchers (except manufacturing)	Meat department manager Meat specialist Meat supervisor
636	Milliners	Millinery copyist Millinery worker Millinery worker

1970-Census-of-Population code	Census occupation	Examples of specific jobs
394	Miscellaneous clerical workers, nec	Coordinator of volunteer services Correspondence analyst Editorial clerk Farm reporter Sales correspondent Service representative Specifications checker
674	Other textile operatives	Cloth painter Cloth shader Clothier Dress draper Patternmaker Silk finisher Silk printer Swatcher Textile screen printer
625	Produce graders and packers (except factory and farm)	Fruit grader Fruit inspector Sample grader Vegetable inspector
663	Sewers and stitchers	Decorator Drapers seamstress Dress fitter Dressmaker Fancy needleworker
551	Tailors	Alteration supervisor Custom tailor Manager, custom tailor shop Textile reweaver
563	Upholsterers	Decorator, furniture upholstery shop
673	Weavers	Cloth weaver Rug weaver Weaver

Interpretation of Employment Opportunities for Design, Manufacturing, and Processing Specialists

The summary supply and demand data for design, manufacturing, and processing specialists project a shortage of qualified higher education graduates through 1990. As shown in table 7, the total average annual supply of 5,794 graduates qualified for employment meets about 78 percent of the demand for 7,444 professionals. Graduates with home economics degrees (1,418) equal only 19 percent of the total average annual demand, and home economics-related graduates (4,376) satisfy 59 percent of the employment demand. When total graduates at the different degree levels are related to total demand, the data indicate doctoral graduates satisfy less than 1 percent of total average annual employment demand; master's graduates, 15 percent; baccalaureate graduates, 38 percent; and associate graduates, 24 percent. To better satisfy the labor-force employment demand, specific types of graduates that appear to be especially needed are as follows:

*Food Science and Human Nutrition.
*Human Environment and Shelter.
*Textiles and Clothing.

As manufacturing and processing industries strive to produce goods which are more responsive to consumer demand and welfare, home economists should play an increasingly important role in product design, development, testing, and regulation. Food scientists and technologists will be needed to develop alternative foods, to experiment with new food processing techniques, to adapt ethnic foods, and to improve/control commercial food processing. Clothing and textile specialists will be needed to enhance the design and production of fabrics, wearing apparel, draperies, carpeting, and upholstered furnishings. Human environment and shelter specialists will be needed to further improve household equipment and appliances, energy conservation through innovative temperature control, and multipurpose furnishings and spatial arrangements. In essence, the ultimate delivery of technological advancements, such as supersonic cleaning of clothing, microwave food preparation, laser beam food preservation, mechanically deboned meat, and synthetic furnishings, will necessitate the involvement of home economists in product design, manufacturing, and processing.

Several of the OES-census occupations for design, manufacturing, and processing specialists may be filled by graduates with an associate degree (for example, examiners, inspectors, graders, testers, cooks, and chefs). Growth of the fast-food and convenience-food industries and of clothing and home furnishings manufacturing industries is continuing at levels which serve to provide notable employment opportunities for students who complete two-year associate degrees leading to requisite specialized skills.

Marketing, Merchandising, and Sales Personnel (Occupational Cluster #3)

Included in this cluster are those retail/wholesale occupations concerned with the marketing, merchandising, and sale of food, clothing, shelter, household equipment, furnishings, and related products. Specific occupations are presented and are as diverse as window designer, account executive, demonstrators, buyer, economist, customer representative, and manufacturer representative. Sales occupations associated with insurance and real estate also are part of this cluster.

Summary and detailed data denoting the supply of graduates qualified for employment as marketing, merchandising, and sales personnel are presented in tables 13, 16, and 17. Summary and detailed data for employment demand in this occupational cluster are presented in tables 15 and 18. Table 14 expresses the average annual supply of graduates as a percent of total average annual demand, by degree type and level.

Table 13--Summary supply of home economics graduates qualified for employment as Marketing, Merchandising, and Sales Personnel[1/]

Graduates	Degree level				
	Associate	Baccalaureate	Master's	Doctoral	Total
Supply of home economics graduates:					
Current, 1977/78	--	4,478	261	4	4,743
Projected, 1989/90	--	4,530	340	6	4,876
Average annual supply, 1977/90	--	4,504	300	5	4,809
Supply of home economics-related graduates:					
Current, 1977/78	918	4,940	1,416	19	7,293
Projected, 1989/90	918[2/]	5,853	1,462	18	8,251
Average annual supply, 1977/90	918	5,397	1,439	18	7,772

-- = No degree specializations selected.

1/ Estimates represent summations of data in tables 16 and 17.
2/ Treated as stable since NCES projections are not computed for associate degrees.

Table 14--1977/90 average annual supply of graduates expressed as a percent of total average annual demand by degree type and level for Marketing, Merchandising, and Sales Personnel[1/]

Type of degree	Supply/demand percent by degree level				
	Associate	Baccalaureate	Master's	Doctoral	Total
Home economics	--	26	2	<1	28
Home economics-related	5	32	8	<1	46
Total	5	58	10	<1	74

-- = No degree specializations selected.

[1/] Average annual supply in table 13 divided by total average annual openings in table 15.

Table 15--Summary employment demand for Marketing, Merchandising, and Sales Personnel with higher education in home economics and related fields[1/]

Census occupation	Percent of total 1978 occupational employment[2/]	1978 level of occupational employment[3/]	1978-90 estimated average annual openings
Buyers (wholesale and retail)	20.00	35,120	2,072
Decorators, window dressers	14.75	18,437	1,681
Demonstrators	20.00	12,121	524
Economists	.55	676	25
Estimators, investigators, nec[4/]	5.76	26,891	1,746
Insurance agents, brokers, and underwriters	1.00	5,680	205
Purchasing agents, buyers, nec	.20	370	42
Real estate agents, brokers	1.00	5,550	477
Sales and sales workers, nec	1.70	72,725	5,082
Sales managers (except retail trade)	5.88	19,218	986
Sales managers and department heads (retail trade)	17.00	59,058	4,229
Total		255,846	17,069

[1/] Based on OES-census-based data; detailed data are shown in table 18.

[2/] Percent equals ratio of occupational employment estimated as possessing higher education in home economics and related fields to total occupational employment.

[3/] Number of workers estimated as possessing higher education in home economics and related fields.

[4/] nec = Not elsewhere classified.

Table 16--Detailed 1977/78 supply of graduates qualified for employment as Marketing, Merchandising, and Sales Personnel[1/]

Educational cluster	Degree level					
	Associate		Bacca-laureate	Master's	Doctoral	Total
	T	N				
Supply of home economics graduates:						
General Home Economics	--	--	316	6	--	322
Business	--	--	38	3	0	41
Family/Consumer Resource Management	--	--	276	31	--	307
Food Service Management and Institutional Management	--	--	33	23	0	56
Food Science and Human Nutrition	--	--	232	52	1	285
Home Economics Communications	--	--	10	0	--	10
Home Economics Education	--	--	348	25	2	375
Human Environment and Shelter	--	--	312	15	0	327
Individual and Family Development	--	--	239	49	--	288
Textiles and Clothing	--	--	2,674	57	1	2,732
Total	--	--	4,478	261	4	4,743
Supply of home economics-related graduates:						
Business	191	206	1,808	1,153	13	3,371
Family and Community Services	--	--	2	4	--	6
Family/Consumer Resource Management	--	--	301	33	--	334
Food Service Management and Institutional Management	88	36	173	52	0	349
Food Science and Human Nutrition	--	--	103	37	4	144
Home Economics Communications	--	--	56	6	--	62
Home Economics Education	--	--	1	1	1	3
Home Environment and Shelter	--	--	530	80	1	611
Individual and Family Development	--	--	188	44	--	232
Textiles and Clothing	191	206	1,778	6	0	2,181
Total	470	448	4,940	1,416	19	7,293

-- = No degree specializations selected.
T = Transferable.
0 = No graduates reported.
N = Nontransferable.

[1/] HEGIS-based data, except for Home Economics Education which are based on the following information sources: Office of Consumer and Home Economics Education, U.S. Department of Education, and Association of Administrators of Home Economics.

Table 17--Detailed 1989/90 projected supply of graduates qualified for employment as Marketing, Merchandising, and Sales Personnel [1/]

Educational cluster	Degree level			
	Bacca-laureate	Master's	Doctoral	Total
Supply of home economics graduates:				
General Home Economics	323	8	--	331
Business	38	4	0	42
Family/Consumer Resource Management	282	42	--	324
Food Service Management and Institutional Management	34	31	0	65
Food Science and Human Nutrition	237	69	2	308
Home Economics Communications	11	0	--	11
Home Economics Education	348	25	2	375
Human Environment and Shelter	319	20	0	339
Individual and Family Development	244	65	--	309
Textiles and Clothing	2,694	76	2	2,772
Total	4,530	340	6	4,876
Supply of home economics-related graduates:				
Business	2,229	1,205	12	3,446
Family and Community Services	2	5	--	7
Family/Consumer Resource Management	371	35	--	406
Food Service Management and Institutional Management	211	52	0	263
Food Science and Human Nutrition	126	43	4	173
Home Economics Communications	73	7	--	80
Home Economics Education	1	1	1	3
Human Environment and Shelter	569	73	1	643
Individual and Family Development	141	34	--	175
Textiles and Clothing	2,130	7	0	2,137
Total	5,853	1,462	18	7,333

-- = No degree specializations selected. 0 = No graduates anticipated.

[1/] Based on NCES projections.

Table 18--Detailed employment demand data for Marketing, Merchandising, and Sales Personnel with higher education in home economics and related fields[1/]

Census occupation	1970 Census-of-Population code	Percent home economics and related employment is of total occupational employment		Number of workers with higher education in home economics and related fields		Employment growth (1978-90)	Average annual growth	Average annual replacement needs	Total average annual employment openings
		1978	1990	1978	1990				
Buyers (wholesale and retail)	205	20.00	19.80	35,120	41,475	6,355	529	1,543	2,072
Decorators, window dressers	425	14.75	16.57	18,437	28,005	9,568	797	884	1,681
Demonstrators	262	20.00	19.47	12,121	13,434	1,312	109	415	524
Economists	91	.55	.46	676	789	113	9	16	25
Estimators, investigators, nec[2/]	321	5.76	6.57	26,891	35,523	8,632	719	1,027	1,746
Insurance agents, brokers, and underwriters	265	1.00	1.00	5,680	6,815	1,135	95	110	205
Purchasing agents, buyers, nec	225	.20	.26	370	698	328	27	15	42
Real estate agents, brokers	270	1.00	.00	5,550	6,700	1,150	96	381	477
Sales and sales workers, nec	280	1.70	1.66	72,725	92,998	20,273	1,689	3,393	5,082
Sales managers (except retail trade)	233	5.88	5.58	19,218	25,070	5,852	488	498	986
Sales managers (retail trade)	231	17.00	16.38	59,058	87,633	28,579	2,381	1,848	4,229

[1/] Developed from OES national census-based matrix data.

[2/] nec = Not elsewhere classified.

Examples of Specific Jobs Representative of Selected OES-Census-Based Occupations Included in the Occupational Cluster for Marketing, Merchandising, and Sales Personnel (Occupational Cluster #3)

1970-Census-of-Population code	Census occupation	Examples of specific jobs
205	Buyers (wholesale and retail)	Buyer Buyer, salesworker Merchandise buyer Merchandise director Merchandise executive
425	Decorators and window dressers	Color consultant Color expert Decorating consultant Decorator Designer Director of display Display coordinator Interior decorator Window decorator Window trimmer
262	Demonstrators	Appliance counselor Fashion consultant, sales Fashion show director Fashion stylist Home service demonstrator Sales demonstrator Sewing demonstrator
091	Economists	Agricultural economist Economist Home-service adviser Home-service consultant Market analyst Market research worker Marketing consultant Social economist Social insurance advisor, Federal Security Agency Welfare advisor, Federal Security Agency Welfare analyst, Federal Security Agency

1970-Census-of-Population code	Census occupation	Examples of specific jobs
321	Estimators and investigators, nec	Credit analyst Customer relations representative Customer service representative
265	Insurance agents, brokers, and underwriters	Insurance adviser Insurance agent Pension adviser Sales agent Service representative
225	Purchasing agents and buyers, nec	Food buyer Professional shopper Purchasing agent
270	Real estate agents and brokers	Real estate agent Realtor Rental agent
280	Sales and sales workers, nec	Baby counselor Baby food detail person Bridal consultant Competitive shopper Drapery counselor Fashion consultant Food counselor Home planning salesperson Manufacturer's representative Merchandise shopper Toy consultant Wallpaper consultant
233	Sales managers (except retail trade)	Regional sales manager Sales manager Sales coordinator Sales supervisor Territory supervisor
231	Sales managers and department heads (retail trade)	Department head Director of sales Division supervisor Dairy department manager Frozen food department manager Merchandise manager Produce department manager Ready-to-wear department manager Sales coordinator Sales executive

Interpretation of Employment Opportunities for Marketing, Merchandising, and Sales Personnel

As shown in table 14, the supply/demand data for marketing, merchandising, and sales personnel suggest an annual shortage of 4,488 professionals, or a 26 percent unmet demand. Annually through 1989/90, about 4,800 graduates with home economics degrees will be available to satisfy only 28 percent of the total average annual demand, and an estimated 7,772 home economics-related graduates will be available to fill 46 percent of annual demand.

Doctoral graduates equal less than 1 percent of the total estimated demand for professionals in this occupational cluster. Master's graduates equal 10 percent. Baccalaureate graduates meet 58 percent, and associate graduates, 5 percent. Consequently, substantial employment opportunities are projected through 1990 for home economics and related graduates with expertise in marketing, merchandising, and sales. Opportunities for doctoral graduates will probably exist, relative to marketing positions. Master's and baccalaureate graduates will be needed primarily for marketing and merchandising positions. Associate graduates may expect to find ready employment in a variety of sales positions.

Essentially all phases of food, clothing, and shelter distribution systems require the procurement of raw materials, the marketing of consumer goods and services, and attention to consumer satisfaction. So, an extensive number of buyers, merchandisers, display specialists, demonstrators, market analysts and economists, and customer relations personnel are needed in the labor force. A sustained demand is anticipated for marketing, merchandising, and sales personnel, since food, clothing, and shelter are requisite to satisfying basic needs of individuals and families and since families of today are consuming units as opposed to producing units.

Additionally, it should be noted that contemporary economic and social conditions require planning and preparing for possible monetary crises that exceed financial resources of the average individual or family. In the midst of continuing inflation, unexpected financial losses may severely impede family/individual welfare because of premature death, disability or illness, property damage or loss, or mandated early retirement. Protection against such loss is increasingly important in the form of various types of insurance. Home economics graduates with expertise in family economics and consumer resource management are uniquely prepared to advise families in providing for future financial security. Career opportunities as insurance agents, brokers, and underwriters are projected to exist for about 200 graduates in this discipline annually through 1990.

Home economics graduates with technical subject matter and business/marketing expertise should be in a strong position to compete through 1990 for employment in this occupational cluster. Graduates which appear to be especially needed are as follows:

- *Business.
- *Family/Consumer Resource Management.
- *Food Service Management and Institutional Management.
- *Food Science and Human Nutrition.
- *Textiles and Clothing.
- *Home Economics Education with collateral study in marketing, merchandising, or consumer education.

Media Specialists (Occupational Cluster #4)

Included in this cluster are those occupations that involve transfer of home economics-related information to the public through the various media. Hence, these occupations require both proficiency in a home economics discipline and knowledge related to a field of media. Professionals in these occupations generally are employed by publishing houses, newspapers, radio and television stations, libraries and museums, and advertising agencies. Additionally, government and private businesses employ media specialists to translate and disseminate research findings and product information to the public.

Summary and detailed data denoting the supply of graduates qualified for employment as media specialists are presented in table 19, 22, and 23. Summary and detailed data for employment demand in this occupational cluster are presented in tables 21 and 24. Table 20 expresses the average annual supply of graduates as a percent of total average annual demand, by degree type and level.

Table 19--Summary supply of home economics graduates qualified for employment as Media Specialists[1/]

Graduates	Degree level				
	Associate	Baccalaureate	Master's	Doctoral	Total
Supply of home economics graduates:					
Current, 1977/78	--	544	77	11	632
Projected, 1989/90	--	553	93	16	662
Average annual supply, 1977/90	--	549	85	13	647
Supply of home economics-related graduates:					
Current, 1977/78	14	826	347	16	1,203
Projected, 1989/90	14[2/]	984	363	15	1,376
Average annual supply, 1977/90	14	905	355	15	1,289

-- = No degree specializations selected.

[1/] Estimates represent summations of data in tables 22 and 23.

[2/] Treated as stable since NCES projections are not computed for associate degrees.

Table 20--1977/90 average annual supply of graduates expressed as a percent of total average annual demand by degree type and level for Media Specialists[1/]

Type of degree	Supply/demand percent by degree level				
	Associate	Baccalaureate	Master's	Doctoral	Total
Home economics	--	34	5	1	40
Home economics-related	1	56	22	1	80
Total	1	90	27	2	120

-- = No degree specializations selected.

[1/] Average annual supply in table 19 divided by total average annual openings in table 21.

Table 21--Summary employment demand for Media Specialists with higher education in home economics and related fields[1/]

Census occupation	Percent of total 1978 occupational employment[2/]	1978 level of occupational employment[3/]	1978-90 estimated average annual openings
Advertising agents and sales workers	4.50	4,392	336
Archivists and curators	1.73	180	8
Authors	3.50	1,519	102
Editors and reporters	5.00	9,545	611
Librarians	.98	1,439	75
Painters and sculptors	.94	1,814	68
Photographers	1.00	930	74
Public relations specialists, writers, publicity writers	3.45	4,523	224
Radio, television announcers	.99	268	9
Writers, artists, entertainers, nec[4/]	3.00	3,555	119
Total		28,165	1,626

[1/] Based on OES-census-based data; detailed data are shown in table 24.

[2/] Percent equals ratio of occupational employment estimated as possessing higher education in home economics and related fields to total occupational employment.

[3/] Number of workers estimated as possessing higher education in home economics and related fields.

[4/] nec = Not elsewhere classified.

Table 22--Detailed 1977/78 supply of graduates qualified for employment as Media Specialists[1/]

Educational cluster	Degree level					
	Associate		Bacca-laureate	Master's	Doctoral	Total
	T	N				
Supply of home economics graduates:						
General Home Economics	--	--	--	6	--	6
Business	--	--	4	1	--	5
Family/Consumer Resource Management	--	--	57	8	--	65
Food Service Management and Institutional Management	--	--	33	4	0	37
Food Science and Human Nutrition	--	--	93	21	3	117
Home Economics Communications	--	--	13	0	0	13
Home Economics Education	--	--	130	25	3	158
Human Environment and Shelter	--	--	125	3	--	128
Individual and Family Development	--	--	--	--	5	5
Textiles and Clothing	--	--	89	9	--	98
Total			544	77	11	632
Supply of home economics-related graduates:						
Business	--	--	207	288	--	495
Family/Consumer Resource Management	--	--	63	8	--	71
Food Service Management and Institutional Management	--	--	173	9	0	182
Food Science and Human Nutrition	--	--	42	15	11	68
Home Economics Communications	6	8	70	9	0	93
Home Economics Education	--	--	0	1	1	2
Human Environment and Shelter	--	--	212	16	--	228
Individual and Family Development	--	--	--	--	4	4
Textiles and Clothing	--	--	59	1	--	60
Total	6	8	826	347	16	1,203

-- = No degree specializations selected.
T = Transferable.
0 = No graduates reported.
N = Nontransferable.

[1/] HEGIS-based data, except for Home Economics Education which are based on the following information sources: Office of Consumer and Home Economics Education, U.S. Department of Education, and Association of Administrators of Home Economics.

Table 23--Detailed 1989/90 projected supply of graduates qualified for employment as Media Specialists[1/]

Educational cluster	Degree level			
	Bacca-laureate	Master's	Doctoral	Total
Supply of home economics graduates:				
General Home Economics	--	8	--	8
Business	4	1	--	5
Family/Consumer Resource Management	59	10	--	69
Food Service Management and Institutional Management	34	5	0	39
Food Science and Human Nutrition	95	27	4	126
Home Economics Communications	13	0	0	13
Home Economics Education	130	25	3	158
Human Environment and Shelter	128	4	--	132
Individual and Family Development	--	--	9	9
Textiles and Clothing	90	13	--	103
Total	553	93	16	662
Supply of home economics-related graduates:				
Business	255	301	--	556
Family/Consumer Resource Management	77	9	--	86
Food Service Management and Institutional Management	211	9	0	220
Food Science and Human Nutrition	50	17	11	78
Home Economics Communications	91	10	0	101
Home Economics Education	1	1	1	3
Human Environment and Shelter	228	15	--	243
Individual and Family Development	--	--	3	3
Textiles and Clothing	71	1	--	72
Total	984	363	15	1,362

-- = No degree specializations selected. 0 = No graduates anticipated.

[1/] Based on NCES projections.

Table 24--Detailed employment demand data for Media Specialists with higher education in home economics and related fields[1/]

Census occupation	1970-Census-of-Population code	Percent home economics and related employment is of total occupational employment		Number of workers with higher education in home economics and related fields		Employment growth (1978-90)	Average annual growth	Average annual replacement needs	Total average annual employment openings
		1978	1990	1978	1990				
ertising agents and sales orkers	260	4.50	4.50	4,392	6,255	1,863	155	181	336
ivists and curators	33	1.73	1.54	180	185	5	0	8	8
ors	181	3.50	3.63	1,519	1,815	296	25	77	102
tors and reporters	184	5.00	5.14	9,545	12,335	2,791	233	378	611
carians	32	.98	.98	1,439	1,564	125	10	65	75
ters and sculptors	190	.94	.94	1,814	1,935	121	10	58	68
tographers	191	1.00	1.34	930	1,437	507	42	32	74
lic relations specialists, ublicity writers	192	3.45	3.22	4,523	5,246	723	60	164	224
io, television announcers	193	.99	1.00	268	334	66	6	3	9
ters, artists, entertainers, nec[2/]	194	3.00	3.04	3,555	3,710	155	13	106	119

/Developed from OES national census-based matrix data.
nec = Not elsewhere classified.

Examples of Specific Jobs Representative of Selected OES-Census-Based Occupations Included in the Occupational Cluster for Media Specialists (Occupational Cluster #4)

1970-Census-of-Population code	Census occupation	Examples of specific jobs
260	Advertising agents and salesworkers	Account executive Advertising representative Display salesperson Media buyer
033	Archivists and curators	Archivist Curator Field collector
181	Authors	Author Free-lance writer Handbook writer Magazine writer Professional writer Scientific writer
184	Editors and reporters	Advertising copy writer Advertising specialist Book reviewer Correspondent Feature writer Health technical writer Information specialist Photo editor Radio commentator Reviewer Technical editor
032	Librarians	Audio visual arts director Librarian Visual education director
190	Painters and sculptors	Art worker Artist Catalogue illustrator Color adviser Commercial artist Etcher Fashion illustrator Free-lance artist Layout artist Newspaper illustrator Scientific illustrator Sketcher Stained glass artist

1970-Census-of-Population code	Census occupation	Examples of specific jobs
191	Photographers	Color photographer Commercial photographer
192	Public relations specialists and publicity writers	Director of public information Director of public relations Health information specialist Public relations representative Publicity consultant Publicity director Publicity writer
193	Radio and television announcers	Announcer Commercial announcer Television announcer
194	Writers, artist, and entertainers, nec	Director of research Lecturer Pattern illustrator Research director Specifications writer Technical director Technical illustrator Technical writer

Interpretation of Employment Opportunities for Media Specialists

The total average annual supply of new graduates with home economics degrees qualified for employment as media specialists meets 40 percent of the estimated total average annual demand for 1,626 professionals. When graduates with home economics-related degrees are considered, the total supply appears to exceed the demand.

Analysis of supply of graduates at the different degree levels in relation to total demand indicates that doctorates contribute 2 percent and master's, 27 percent toward meeting total average annual employment demand. Baccalaureate graduates appear to be available to fill the rest.

An important occupational field for home economics media specialists is that consisting of editors, reporters, and writers. Government, private industry, and education employ such personnel to report research findings for use by professionals and consumers. Business, professional, and service organizations and agencies employ them to edit and publish newsletters, magazines, and other publications for employees, members and the general public. Additionally, these types of professionals are employed by publishing firms producing technical journals, books, and other media for professional and public users. Other positions for home economics media specialists exist with advertising and sales agencies.

The demand data reveal a limited need for archivists, curators, radio and television announcers. Similarly, there appears to be little demand for additional librarians, painters, sculptors, and photographers.

Success in home economics communications requires that an individual possess an excellent command of language, ability to think clearly and logically, and skill in transmitting subject information to an audience. An example of a position in this occupational area, recently described in a popular magazine, involves promotion for peanuts throughout North Carolina and Virginia. The home economist in the position participates in radio and television programs, develops releases for newspapers and magazines, and creates menus and recipes to promote consumption of peanuts.

It should be noted that the number of average annual graduates completing a degree specialization in home economics communications is relatively low. Therefore, these individuals should experience promising employment opportunities. However, other types of home economics graduates desiring to achieve a career in media should expect to encounter significant competition from graduates of related fields with similar qualifications.

Critical information gaps exist between the levels of the professional home economist and the general public. Rapidly expanding knowledge and accelerating demand for valid adequate information relative to family and individual concerns (for example, nutrition and food safety, personal finance, parenting, and home energy conservation) contribute to a growing need for professional home economists capable of preparing and disseminating desired information through the various media. So, students should be encouraged to acquire technical expertise in home economics in conjunction with communications skills and to pursue media careers. Educational backgrounds which best qualify graduates for employment in media occupations are these:

*Food Science and Human Nutrition.
*Home Economics Communications.
*Home Economics Education.
*Human Environment and Shelter.
*Textiles and Clothing.

Included in this cluster are those occupations which require highly developed scientific and technical competency in an home economics discipline. The scientist and technical specialists employed in these occupations strive through research and related endeavors to develop and apply knowledge toward advancing the physical, biological, and social welfare of families and individuals.

Summary and detailed data denoting the supply of graduates qualified for employment as scientific and professional specialists are presented in tables 25, 28, and 29. Summary and detailed data for employment demand in this occupational cluster are presented in tables 27 and 30. Table 26 expresses the average annual supply of graduates as a percent of total average annual demand, by degree type and level.

Table 25--Summary supply of home economics graduates qualified for employment as Scientific and Professional Specialists[1/]

Graduates	Degree level			
	Baccalaureate	Master's	Doctoral	Total
Supply of home economics graduates:				
Current, 1977/78	2,234	292	20	2,546
Projected, 1989/90	2,282	389	34	2,705
Average annual supply, 1977/90	2,258	341	27	2,626
Supply of home economics-related graduates:				
Current, 1977/78	1,499	217	62	1,778
Projected, 1989/90	1,816	249	62	2,127
Average annual supply, 1977/90	1,657	233	62	1,952

[1/] Estimates represent summations of data in tables 28 and 29.

Table 26--1977/90 average annual supply of graduates expressed as a percent of total average annual demand by degree type and level for Scientific and Professional Specialists[1/]

Type of degree	Supply/demand percent by degree level			
	Bacca-laureate	Master's	Doctoral	Total
Home economics	47	7	1	55
Home economics-related	34	5	1	40
Total	81	12	2	95

[1/] Average annual supply in table 25 divided by total average annual openings in table 27.

Table 27--Summary employment demand for Scientific and Professional Specialists with higher education in home economics and related fields[1/]

Census occupation	Percent of total 1978 occupational employment[2/]	1978 level of occupational employment[3/]	1978-90 estimated average annual openings
Actuaries	0.34	31	2
Agricultural and biological technicians (except health)	10.00	4,470	218
Agricultural scientists	1.19	234	18
Biological scientists	1.00	622	35
Chemical technicians	10.00	8,820	306
Chemists	1.04	1,278	45
Computer programmers	.20	494	29
Dietitians	100.00	34,997	3,056
Engineering, science technicians, nec[4/]	1.00	2,244	94
Health technologists, technicians, nec	2.20	2,880	228
Inspectors (except construction, public administration)	.10	9,800	583
Life, physical scientists, nec	10.00	260	7
Research workers, nec	.88	1,119	24
Social scientists, nec	.69	55	1
Statisticians	.43	98	5
Technicians, nec (except health)	.16	97	2
Therapists (arts or recreation)	1.00	1,643	155
Urban and regional planners	1.00	170	11
Total		69,312	4,819

[1/] Based on OES-census-based data; detailed data are shown in table 30.

[2/] Percent equals ratio of occupational employment estimated as possessing higher education in home economics and related fields to total occupational employment.

[3/] Number of workers estimated as possessing higher education in home economics and related fields.

[4/] nec = Not elsewhere classified.

Table 28--Detailed 1977/78 supply of graduates qualified for employment as Scientific and Professional Specialists[1/]

Educational cluster	Degree level			
	Bacca-laureate	Master's	Doctoral	Total
Supply of home economics graduates:				
General Home Economics	--	11	--	11
Business	1	--	--	1
Family/Consumer Resource Management	--	6	4	10
Food Service Management and Institutional Management	80	4	0	84
Food Science and Human Nutrition	2,091	258	13	2,362
Home Economics Education	--	--	2	2
Human Environment and Shelter	62	3	--	65
Textiles and Clothing	--	10	1	11
Total	2,234	292	20	2,546
Supply of home economics-related graduates:				
Business	52	--	--	52
Family/Consumer Resource Management	--	7	3	10
Food Service Management and Institutional Management	415	9	0	424
Food Science and Human Nutrition	926	184	58	1,168
Home Economics Education	--	--	1	1
Human Environment and Shelter	106	16	--	122
Textiles and Clothing	--	1	0	1
Total	1,499	217	62	1,778

-- = No degree specializations selected. 0 = No graduates reported.

[1/] HEGIS-based data, except for Home Economics Education which are based on these information sources: Office of Consumer and Home Economics Education, U.S. Department of Education, and Association of Administrators of Home Economics.

Table 29--Detailed 1989/90 projected supply of graduates qualified for employment as Scientific and Professional Specialists[1/]

Educational cluster	Degree level			
	Bacca-laureate	Master's	Doctoral	Total
Supply of home economics graduates:				
General Home Economics	--	15	--	15
Business	1	--	--	1
Family/Consumer Resource Management	--	8	7	15
Food Service Management and Institutional Management	81	5	0	86
Food Science and Human Nutrition	2,136	344	23	2,503
Home Economics Education	--	--	2	2
Human Environment and Shelter	64	4	--	68
Textiles and Clothing	--	13	2	15
Total	2,282	389	34	2,705
Supply of home economics-related graduates:				
Business	64	--	--	64
Family/Consumer Resource Management	--	7	3	10
Food Service Management and Institutional Management	505	9	0	514
Food Science and Human Nutrition	1,133	217	58	1,408
Home Economics Education	--	--	1	1
Human Environment and Shelter	114	15	--	129
Textiles and Clothing	--	1	0	1
Total	1,816	249	62	2,127

-- = No degree specializations selected. 0 = No graduates anticipated.

[1/] Based on NCES projections.

Table 30--Detailed employment demand data for Scientific and Professional Specialists with higher education in home economics and related fields[1/]

Census occupation	1970-Census-of-Population code	Percent home economics and related employment is of total occupational employment		Number of workers with higher education in home economics and related fields		Employment growth (1978-90)	Average annual growth	Average annual replacement needs	Total average annual employment openings
		1978	1990	1978	1990				
Actuaries	34	0.34	0.31	31	37	6	1	1	2
Agricultural and biological technicians (except health)	150	10.00	10.00	4,470	5,550	1,080	90	128	218
Agricultural scientists	42	1.19	1.32	234	345	111	9	9	18
Biological scientists	44	1.00	1.07	622	845	223	19	16	35
Chemical technicians	151	10.00	9.57	8,820	10,583	1,762	147	159	306
Chemists	45	1.04	.98	1,278	1,481	203	17	28	45
Computer programmers	3	.20	.21	494	672	178	15	14	29
Dietitians	74	100.00	100.00	34,997	50,002	15,005	1,250	1,806	3,056
Engineering, science technicians, nec[2/]	162	1.00	1.00	2,244	2,840	596	50	44	94
Health technologists, technicians, nec	85	2.20	2.60	2,880	4,441	1,560	130	98	228
Inspectors (except construction, public administration)	215	.10	.10	9,800	12,200	2,400	200	383	583
Life, physical scientists, nec	54	10.00	9.00	260	270	10	1	6	7
Research workers, nec	195	.88	.84	1,119	1,128	9	1	23	24
Social scientists, nec	96	.69	.50	55	43	-12	-1	2	1
Statisticians	36	.43	.39	98	120	22	2	3	5
Technicians (except health)	173	.16	.12	97	93	-4	0	2	2
Therapists (arts or recreation)	76	1.00	1.18	1,643	2,714	1,070	89	66	155
Urban and regional planners	95	1.00	1.18	170	259	89	7	4	11

[1/] Developed from OES national census-based matrix data.

[2/] nec = Not elsewhere classified.

Examples of Specific Jobs Representative of Selected OES-Census-Based Occupations Included in the Occupational Cluster for Scientific and Professional Specialists (Occupational Cluster #5)

1970-Census-of-Population code	Census occupation	Examples of specific jobs
034	Actuaries	Insurance actuary
150	Agriculture and biological technicians (except health)	Agriculture research laboratory assistant Bacteriology technician Dairy and food laboratory assistant Laboratory analyst Laboratory supervisor Research and development technician
042	Agricultural scientists	Agricultural scientist Agricultural specialist Dairy scientist Dairy technologist Fiber technologist Wool technologist
044	Biological scientists	Bacteriologist Bioanalyst Bioassayist Biological scientist Clinical biochemist Dairy bacteriologist Epidemiologist Physiologist
151	Chemical technicians	Bleach analyst Chemical analytical sampler Chemical laboratory technician Chemical research worker Chemist's assistant Color expert Fiber analyst Laboratory supervisor Laboratory technician Polymer tester Rayon tester Research and development technician Viscosity technician

1970-Census-of-Population code	Census occupation	Examples of specific jobs
045	Chemists	Agricultural chemist Biological chemist Cereal chemist Color consultant Colorist Dairy chemist Dye expert Food chemist Food processing chemist Food scientist Food technologist Nutritional chemist Textile chemist Textile colorist, formulator Textile technologist
003	Computer programmers	Computer programmer Electronic data programmer
074	Dietitians	Consultant dietitian Diet supervisor Diet therapist Dietary aide Dietitian Food advisor Nutrition director Nutritionist Public health dietitian Research dietitian Therapeutic dietitian
162	Engineering and science technicians, nec	Cloth tester Color technician Laboratory technician Lighting adviser Lighting specialist Woolen tester Yarn tester
085	Health technologists and technicians, nec	Child health associate Dietary technician Food service technician Health sanitarian Public health assistant Public health educator Public health technologist

1970-Census-of-Population code	Census occupation	Examples of specific jobs
215	Inspectors (except construction, public administration)	Food inspector Housing inspector Meat inspector Milk inspector Market news reporter Meat grader Rent and housing investigator
054	Life and physical scientists, nec	Environmental scientist Information scientist Management scientist
195	Research workers, nec	Clinical fellow assistant Research manager Research analyst Research assistant Research director Researcher
096	Social scientists, nec	Behavioral scientist Demographer Social scientist
036	Statisticians	Analytical statistician Biometrician Statistical analyst Survey statistician
173	Technicians, nec	Home lighting adviser
076	Therapists (arts or recreation)	Homemaking rehabilitation consultant Manual arts therapist
095	Urban and regional planners	City planning aid Regional planner Urban planner

Interpretation of Employment Opportunities for Scientific and Professional Specialists

The summary supply and demand data for scientific and professional specialists, as presented in table 26, indicate a less than adequate supply of qualified home economics and related professionals through 1989/90. Graduates with home economics degrees equal 55 percent of the total average annual employment demand; home economics-related graduates will meet about 40 percent more of the employment demand. When the average annual supply of graduates at the different degree levels is related to average annual demand, doctoral graduates appear to meet 2 percent of employment demand; master's, 12 percent; and baccalaureates, 81 percent.

Public consciousness increasingly reflects concern for a nutritious and safe food supply at reasonable cost and an improved quality of life through safe, functional and cost-efficient housing, clothing, and furnishings. Concurrently, more attention is being directed toward family pressures associated with such issues as urbanization, population growth, working wives and mothers, inflation, and changing lifestyles. Therefore, a sustained demand for scientific and professional home economists capable of addressing these problems is anticipated throughout the decade.

For example, dietetics as an occupational field has continued to expand and is likely to continue to do so in the future. There were 36,000 members of the American Dietetics Association in 1978. By 1980, this number reached 42,000. Recent emphasis on physical well-being through disease prevention offers growing clinical and research opportunities for nutritionists. Positions for inspectors and selected technicians are also increasing. Homemaker rehabilitation specialists are in greater demand because of an increased focus on the disabled and the aging. The exploding use of data processing technologies is creating an expanding demand for computer specialists with technical expertise in home economics. The importance of analyzing the influences of public policy on families contributes to the need for additional researchers trained in the home economics social sciences.

To meet employment demand for scientific and professional specialists, higher education in home economics must be encouraged to produce additional graduates, particularly at the master's and doctoral levels, in such specializations as--

*Family/Consumer Resource Management.
*Food Science and Human Nutrition.
*Human Environment and Shelter.
*Textiles and Clothing.

Service Specialists (Occupational Cluster #6)

Included in this cluster are those occupations related to designing and providing individual and family services at local, State, and national levels. Professionals in this area generally are employed with organizations providing social, health/medical, financial, or consumer services directed toward helping families and individuals deal with problems associated with social change and conflict.

Summary and detailed data denoting the supply of graduates qualified for employment as service specialists are presented in tables 31, 34, and 35. Summary and detailed data for employment demand in this occupational cluster are presented in tables 33 and 36. Table 32 expresses the average annual supply of graduates as a percent of total average annual demand, by degree type and level.

Table 31--Summary supply of home economics graduates qualified for employment as Service Specialists[1/]

Graduates	Degree level				
	Associate	Baccalaureate	Master's	Doctoral	Total
Supply of home economics graduates:					
Current, 1977/78	1,321	3,113	389	40	4,863
Projected, 1989/90	1,321[2/]	3,180	500	67	5,068
Average annual supply, 1977/90	1,321	3,147	444	53	4,965
Supply of home economics-related graduates:					
Current, 1977/78	--	2,492	367	49	2,908
Projected, 1989/90	--	2,571	334	45	2,950
Average annual supply, 1977/90	--	2,532	350	47	2,929

-- = No degree specializations selected.

[1/] Estimates represent summations of data in tables 34 and 35.

[2/] Treated as stable since NCES projections are not computed for associate degrees.

Table 32--1977/90 average annual supply of graduates expressed as a percent of total average annual demand by degree type and level for Service Specialists[1/]

Type of degree	Supply/demand percent by degree level				
	Associate	Baccalaureate	Master's	Doctoral	Total
Home economics	18	43	6	1	68
Home economics-related	--	35	5	1	41
Total	18	78	11	2	109

-- = No degree specializations selected.

[1/] Average annual supply in table 31 divided by total average annual openings in table 33.

Table 33--Summary employment demand for Service Specialists with higher education in home economics and related fields[1/]

Census occupation	Percent of total 1978 occupational employment[2/]	1978 level of occupational employment[3/]	1978-90 estimated average annual openings
Attendants, personal service, nec[4/]	0.37	291	32
Child care workers (except private household)	5.27	20,181	1,751
Health aides (except nursing)	6.30	15,611	2,627
Health trainees	1.00	136	2
Housekeepers (except private household)	7.53	9,633	1,324
Nurse aides, orderlies, and attendants	.95	9,840	866
Personnel and labor relations workers	.18	774	22
Recreation workers	1.03	1,346	76
Social workers	1.32	5,254	255
Sociologists	.74	29	3
Welfare service aides	4.08	3,917	295
Total		67,012	7,253

[1/] Based on OES-census-based data; detailed data are shown in table 36.

[2/] Percent equals ratio of occupational employment estimated as possessing higher education in home economics and related fields to total occupational employment.

[3/] Number of workers estimated as possessing higher education in home economics and related fields.

[4/] nec - Not elsewhere classified.

Table 34--Detailed 1977/78 supply of graduates qualified for employment as Service Specialists[1/]

Educational cluster	Degree level					
	Associate		Bacca-laureate	Master's	Doctoral	Total
	T	N				
Supply of home economics graduates:						
General Home Economics	--	--	63	23	--	86
Family and Community Services	367	954	--	--	--	1,321
Family/Consumer Resource Management	--	--	414	39	5	458
Food Service Management and Institutional Management	--	--	66	4	--	70
Food Science and Human Nutrition	--	--	1,162	52	5	1,219
Home Economics Communications	--	--	1	0	--	1
Home Economics Education	--	--	87	51	3	141
Human Environment and Shelter	--	--	125	6	0	131
Individual and Family Development	--	--	1,195	214	27	1,436
Total	367	954	3,113	389	40	4,863
Supply of home economics-related graduates:						
Family and Community Services	--	--	23	51	3	77
Family/Consumer Resource Management	--	--	452	42	4	498
Food Service Management and Institutional Management	--	--	346	9	--	355
Food Science and Human Nutrition	--	--	514	37	22	573
Home Economics Communications	--	--	7	1	--	8
Home Economics Education	--	--	0	2	1	3
Human Environment and Shelter	--	--	212	32	0	244
Individual and Family Development	--	--	938	193	19	1,150
Total	--	--	2,492	367	49	2,908

-- = No degree specializations selected.
T = Transferable.
0 = No graduates reported
N = Nontransferable

[1/] HEGIS-based data, except for Home Economics Education which are based on these information sources: Office of Consumer and Home Economics Education, U.S. Department of Education, and Association of Administrators of Home Economics.

Table 35--Detailed 1989/90 projected supply of graduates qualified for employment as Service Specialists[1/]

Educational cluster	Degree level			
	Bacca-laureate	Master's	Doctoral	Total
Supply of home economics graduates:				
General Home Economics	65	30	--	95
Family/Consumer Resource Management	423	52	9	484
Food Service Management and Institutional Management	68	5	--	73
Food Science and Human Nutrition	1,187	69	9	1,265
Home Economics Communications	1	0	--	1
Home Economics Education	87	51	3	141
Human Environment and Shelter	128	8	0	136
Individual and Family Development	1,221	285	46	1,552
Total	3,180	500	67	3,747
Supply of home economics-related graduates:				
Family and Community Services	22	57	2	81
Family/Consumer Resource Management	557	44	4	605
Food Service Management and Institutional Management	421	9	--	430
Food Science and Human Nutrition	630	43	22	695
Home Economics Communications	10	1	--	11
Home Economics Education	0	3	1	4
Human Environment and Shelter	228	29	0	257
Individual and Family Development	703	148	16	867
Total	2,571	334	45	2,950

-- = No degree specializations selected. 0 = No graduates anticipated.

[1/] Based on NCES projections.

Table 36--Detailed employment demand data for Service Specialists with higher education in home economics and related fields[1/]

Census occupation	1970-Census-of-Population code	Percent home economics and related employment is of total occupational employment		Number of workers with higher education in home economics and related fields		Employment growth (1978-90)	Average annual growth	Average annual replacement needs	Total average annual employment openings
		1978	1990	1978	1990				
:tendants, personal service, nec[2/]	933	0.37	0.42	291	424	133	11	21	32
ıild care workers (except private household)	942	5.27	4.79	20,181	26,408	6,227	519	1,232	1,751
:alth aides (except nursing)	922	6.30	7.22	15,611	36,100	20,489	1,707	920	2,627
:alth trainees	923	1.00	1.00	136	100	-36	-3	5	2
ıusekeepers (except private)	950	7.53	9.61	9,633	17,583	7,950	663	661	1,324
ırse aides, orderlies, attendants	925	.95	.94	9,840	14,745	4,905	409	457	866
:rsonnel and labor relations workers	56	.18	.17	774	792	18	2	20	22
:creation workers	101	1.03	1.06	1,346	1,736	390	33	43	76
ıcial workers	100	1.32	1.27	5,254	6,041	787	66	189	255
ıciologists	94	.74	.77	29	48	19	2	1	3
:lfare service aides	954	4.08	4.64	3,917	5,378	1,461	122	173	295

[1/] Developed from OES national census-based matrix data.

[2/] nec = Not elsewhere classified.

Examples of Specific Jobs Representative of Selected OES-Census-Based Occupation included in the Occupational Cluster for Service Specialists (Occupational Cluster #6)

1970-Census-of-Population code	Census occupation	Examples of specific jobs
933	Attendants, personal service, nec	Art museum aide Costumer Tour director Weight reducing technician
942	Child care workers (except private household)	Child care assistant Children's institution attendant Children's matron Cottage parent Day-care assistant Nursery supervisor Teacher's aide
922	Health aides (except nursing)	Dietitian's aide Food service manager Health education aide Nutrition aide Supervisor, food service
923	Health trainees	Dietetic intern Health trainee
950	Housekeepers (except private household)	Cafeteria supervisor Clothing supervisor Diet kitchen supervisor Dining room manager Dining room supervisor Executive housekeeper Food supervisor Kitchen manager Lunchroom supervisor Residence director Supervisor, food service
925	Nursing aides, orderlies, and attendants	Children's aide Mental health aide Nursery technician

1970-Census-of-Population code	Census occupation	Examples of specific jobs
056	Personnel and labor relations workers	Employment counselor Employee relations manager Job specification writer Job training supervisor Personnel director Personnel interviewer Personnel recruiter Personnel representative Placement counselor Training coordinator Training specialist
101	Recreation workers	Activities director Boys' advisor counselor Camp advisor Camp director Field representative Program director Recreation counselor Youth program director
100	Social workers	Adoption agent Case investigator Case reviewer Case supervisor Child consultant Child guidance counselor Child welfare consultant Crime prevention worker Home-service director Juvenile officer Rural health consultant Welfare case worker Welfare supervisor
094	Sociologists	Rural sociologist Sociologist
954	Welfare service aides	Community aide Community coordinator Counseling aide Family service aide Parent aide Welfare service aide

Interpretation of Employment Opportunities for Service Specialists

As shown in table 32, the total average annual supply of graduates qualified for employment as service specialists somewhat exceeds the 7,253 average annual openings through 1990. Graduates with home economics degrees equal 68 percent of the demand. The 4,965 home economics-related graduates satisfy 41 percent of employment demand. When graduates at the different degree levels are related to total average annual demand, the data indicate doctoral graduates satisfy 2 percent of employment demand; master's, 11 percent; and baccalaureates, 78 percent.

During the seventies, the family and individual services arena expanded greatly in response to social, environmental, physical, and economic problems. This trend is expected to continue throughout the present decade, although the rate of expansion may be less dramatic. Such a trend has resulted in an increased need for home economics professionals employed with licensed day-care facilities, nonformal consumer education programs, family and personal counseling programs, nutrition education programs, recreation and hospitality businesses, employment and personnel offices, and local and State social service and welfare programs.

Social, psychological, and economic research indicates that families of this and future decades will continue to experience stress with which they will need help in coping. Inflation, crowding, divorce, remarriage, job mobility, retirement, aging, disability, and chronic illness are only a few of the many problems which will continue to necessitate the provision of services directed toward the prevention/resolution of family and individual dysfunction.

Employers seeking service specialists with substantial expertise in home economics will most likely direct their search toward the following types of graduates:

*Family and Community Services, especially associate-degree graduates qualified to assume paraprofessional positions related to child care and public health.
*Family/Consumer Resource Management.
*Food Science and Human Nutrition.
*Food Service Management and Institutional Management.
*Individual and Family Development.

Educators (Occupational Cluster #7)

Included in this cluster are those occupations which require home economics expertise as an educator. Professional areas encompass teaching and counseling as related to early childhood, elementary, secondary, post-secondary, and adult education. In addition, all home economics college and university faculty engaged in research and all professional home economists with the Cooperative Extension Services are included in this composite occupational cluster.

Summary and detailed data denoting the supply of graduates qualified for employment as educators are presented in tables 37, 40, and 41. With regard to employment demand, summary data are shown in table 39. Detailed data are provided in tables 42 (preschool through secondary teachers and counselors), 43, 44 (Cooperative Extension Services), and 45 (college and university faculty). Table 38 expresses the average annual supply of graduates as a percent of average annual demand, by degree type and level.

Table 37--Summary supply of home economics graduates qualified for employment as Educators[1/]

Graduates	Degree level			
	Baccalaureate	Master's	Doctoral	Total
Supply of home economics graduates:				
Current, 1977/78	5,543	1,085	143	6,773
Projected, 1989/90	5,604	1,337	215	7,156
Average annual supply, 1977/90	5,573	1,211	179	6,963
Supply of home economics-related graduates:				
Current, 1977/78	2,429	984	175	3,588
Projected, 1989/90	2,141	913	166	3,220
Average annual supply, 1977/90	2,285	948	170	3,403

[1/] Estimates represent summations of data in tables 40 and 41.

Table 38--1977/90 average annual supply of graduates expressed as a percent of total average annual demand by degree type and level for Educators[1/]

Type of degree	Supply/demand percent by degree level			
	Bacca-laureate	Master's	Doctoral	Total
Home economics	63	14	2	79
Home economics-related	26	11	2	39
Total	89	25	4	118

[1/] Average annual supply in table 37 divided by total average annual openings in table 39.

Table 39--Summary employment demand for Educators with higher education in home economics and related fields

Census occupation	Percent of total occupational employment[1/]	Level of occupational employment[2/]	1978-90 estimated average annual openings
Preschool, kindergarten teachers[3/]	29.79	70,774	3,780
Elementary school teachers[3/]	1.00	13,553	763
Secondary teachers[3/]	5.00	59,872	1,019[8/]
Teachers, nec[4/] (except college and university)[5/]	5.00	11,619	660
Junior college faculty[5/]	.88	700	30
College and university teaching and research faculty in home economics[6/]	100.00	7,949	854
Adult education teachers[3/]	9.48	7,975	306
Vocational education counselors	9.68	17,185	627
Cooperative Extension Services personnel[7/]	35.00	6,532	865
Total		196,159	8,904

[1/] Percent equals ratio of occupational employment estimated as possessing higher education in home economics and related fields to total occupational employment.

[2/] Number of workers estimated as possessing higher education in home economics and related fields.

[3/] Based on OES-census-based data; detailed data are shown in table 42.

[4/] nec = Not elsewhere classified.

[5/] Based on estimates from the Office of Research, National Education Association.

[6/] Based on the Clemson study; detailed data are shown in table 45.

[7/] Based on SEA's master personnel file for the Cooperative Extension Services; detailed data are shown in tables 43 and 44.

[8/] BLS projects an overall 22-percent decrease in all secondary teachers by 1990. Experts in the field of home economics tend to estimate a more conservative decrease of 10 percent for consumer and homemaking teachers and for occupational home economics teachers at the high school level. Application of a 10-percent decrease results in an average annual demand for 1,019 new qualified teachers.

Table 40--Detailed 1977/78 supply of graduates qualified for employment as Educators[1/]

Educational cluster	Degree level			
	Bacca-laureate	Master's	Doctoral	Total
Supply of home economics graduates:				
General Home Economics	63	60	--	123
Business	--	1	0	1
Family/Consumer Resource Management	115	47	8	170
Food Service Management and Institutional Management	33	23	0	56
Food Science and Human Nutrition	139	103	21	263
Home Economics Communications	1	0	0	1
Home Economics Education	2,695	331	42	3,068
Human Environment and Shelter	125	9	0	134
Individual and Family Development	2,151	486	59	2,696
Textiles and Clothing	223	25	13	261
Total	5,545	1,085	143	6,773
Supply of home economics-related graduates:				
Business	--	288	0	288
Family and Community Services	7	16	6	29
Family/Consumer Resource Management	125	50	6	181
Food Service Management and Institutional Management	173	52	1	226
Food Science and Human Nutrition	62	73	92	227
Home Economics Communications	7	1	0	8
Home Economics Education	7	15	18	40
Human Environment and Shelter	212	48	10	270
Individual and Family Development	1,688	438	41	2,167
Textiles and Clothing	148	3	1	152
Total	2,429	984	175	3,588

-- = No degree specializations selected. 0 = No graduates reported.

[1/] HEGIS-based data, except for Home Economics Education which are based on these information sources: Office of Consumer and Home Economics Education, U.S. Department of Education, and Association of Administrators of Home Economics.

Table 41--Detailed 1989/90 projected supply of graduates qualified for employment as Educators[1/]

Educational cluster	Degree level			
	Bacca-laureate	Master's	Doctoral	Total
Supply of home economics graduates:				
General Home Economics	65	81	--	146
Business	3	1	0	1
Family/Consumer Resource Management	117	62	14	193
Food Service Management and Institutional Management	34	31	0	65
Food Science and Human Nutrition	142	137	36	315
Home Economics Communications	1	0	0	1
Home Economics Education	2,695	331	42	3,068
Human Environment and Shelter	128	12	0	140
Individual and Family Development	2,198	649	101	2,948
Textiles and Clothing	224	33	22	279
Total	5,604	1,337	215	7,156
Supply of home economics-related graduates:				
Business	--	301	--	301
Family and Community Services	7	18	5	30
Family/Consumer Resource Management	155	52	6	213
Food Service Management and Institutional Management	211	52	1	264
Food Science and Human Nutrition	76	87	92	255
Home Economics Communications	10	1	0	11
Home Economics Education	11	18	15	44
Human Environment and Shelter	228	44	10	282
Individual and Family Development	1,266	337	36	1,639
Textiles and Clothing	177	3	1	181
Total	2,141	913	166	3,221

-- = No degree specializations selected. 0 = No graduates anticipated.

[1/] Based on NCES projections.

Table 42--Detailed employment demand data for preschool through secondary Educators with higher education in home economics and related fields[1/]

Census occupation	1970-Census-of-Population code	Percent home economics and related employment is of total occupational employment		Number of workers with higher education in home economics and related fields		Employment growth (1978-90)	Average annual growth	Average annual replacement needs	Total average annual employment openings
		1978	1990	1978	1990				
Preschool, kindergarten teachers	143	29.79	29.87	70,774	84,232	13,458	1,122	2,658	3,780
Elementary school teachers	142	1.00	1.00	13,553	15,804	2,251	188	575	763
Secondary teachers	144	5.00	6.12	59,872	53,885	-5,987	-499	1,519	1,019[2/]
Teachers, nec[3/] (except college and university)	145	5.00	5.34	11,619	12,571	952	79	581	660
Adult education teachers	141	9.48	9.08	7,975	8,627	652	54	252	306
Vocational education counselors	174	9.68	9.63	17,185	18,690	1,505	125	502	627

[1/] Developed from OES national census-based matrix data.

[2/] BLS projects an overall 22 percent decrease in secondary teachers by 1990. Experts in the field of home economics tend to estimate a more conservative decrease of 10 percent for consumer and homemaking teachers and for occupational home economics teachers at the high school level. Application of a 10 percent decrease results in an average annual demand for 1,019 new qualified teachers.

[3/] nec = Not elsewhere classified.

Table 43--Detailed 1979 employment and projected demand data for the Cooperative Extension Services by position title, 1979-85[1/]

Position title	Total employment 1979[2/]	Home economics personnel				Agriculture personnel			
		Employment 1979[2/]	Estimated average annual growth 1979-85[3/]	Average annual replacements 1970-79[2,4/]	Estimated average annual openings 1979-85[4/]	Employment 1979[2/]	Estimated average annual growth 1979-85[3/]	Average annual replacements 1970-79[2,4/]	Estimated average annual openings 1979-85[4/]
Area agent	694	88	13			606	60		
County or local agent	11,616	5,026	104			6,590	200		
State specialist	4,580	936	13			3,644	136		
Supervisor	749	217	--			532	--		
Other	1,023	236	--			787	--		
Total	18,662	6,503	130	735	865	12,159	396	859	1,255

1/Methodology underlying analysis of the data is presented in appendix 16.
2/Based on 1979 Cooperative Extension Services data.
3/Estimates provided by USDA, SEA-Extension.
4/Position subtotals are unavailable.

Table 44--Detailed 1979 employment and projected demand data for the Cooperative Extension Services by area of responsibility, 1979-85[1/]

Employment category	Area of responsibility						
	Agriculture and natural resources	Community and resource development	Home economics and family living	4-H and youth	Administration	Undesignated	Total
1979 Employment[2/]							
Agriculture	7,428	825	203	1,940	1,367	366	12,159
Home economics	372	167	4,002	1,345	353	264	6,503
Total	7,800	992	4,205	3,285	1,720	660	18,662
Estimated average annual growth, 1979-85[3/]							
Agriculture	198	59	40	99	--	--	396
Home economics	--	16	91	23	--	--	130
Total	198	75	131	122	--	--	526
Average annual replacements, 1979-85[2,4/]							
Agriculture							859
Home economics							735
Total							1,594

[1/] Methodology underlying analysis of the data is presented in appendix 16.

[2/] Based on 1979 Cooperative Extension Services data.

[3/] Estimates provided by USDA, SEA-Extension.

[4/] Area of responsibility subtotals are unavailable.

Table 45--Home economics teaching and research faculty in higher education: 1979 sample employment and unfilled positions and 1989 projected average annual openings extrapolated for total population[1/]

Teaching/research field	Sample response				Population estimate: 1980-89 projected average annual openings[5/]
	Fall 1979 employment		Fall 1979 unfilled positions[3/]	1980-89 estimated total retirements[4/]	
	Total	Minorities[2/]			
Home Economics					
General	323	11	81	71	95
Home Economics in Business					
General	14	2	19	62	31
Home Economics Communications					
General	4	0	0	1	0
Journalism	0	0	0	0	0
Media	0	0	0	0	0
Home Economics Education					
General	287	18	36	42	79
Family and Community Services					
General	57	5	9	7	10
Nonformal Education	8	0	2	3	3
Extension, Adult/Extended	41	5	18	5	19
Family Services	19	0	1	0	1
Family/Consumer Resource Management					
General	75	1	13	8	15
Consumer Sciences	57	3	12	6	13
Family Economics	50	3	12	7	14
Home Management	49	1	12	10	14
Food and Nutrition					
General	300	10	50	24	55
Dietetics	297	24	72	28	78
Food/Food Sciences	169	12	19	24	23
Human Nutritional Services	128	7	14	7	16
Nutrition Research	140	12	30	17	34

See footnotes at end of table.

Table 45--Home economics teaching and research faculty in higher education: 1979 sample employment and unfilled positions and 1989 projected average annual openings extrapolated for total population[1]--Continued

Teaching/research field	Sample response				Population estimate: 1980-89 projected average annual openings[5]
	Fall 1979 employment		Fall 1979 unfilled positions[3]	1980-89 estimated total retirements[4]	
	Total	Minorities[2]			
Human Environment and Shelter					
General	32	1	8	8	10
Household Equipment	33	1	10	7	11
Housing	53	2	8	10	10
Interior Design (includes decorating)	166	2	25	14	28
Individual and Family Development					
General	143	6	35	13	38
Human Development					
Child Development	462	29	88	45	97
Adult Development	14	0	1	4	2
Aging, Gerontology	20	1	0	4	1
Family Studies					
Family Relations	170	3	31	20	35
Family Counseling	29	0	3	3	4
Institutional, Hotel, Restaurant Management					
General	33	0	3	2	3
Executive Housekeeping	0	0	0	0	0
Hotel, Motel, Tourism, Hospitality Management	19	0	1	4	2
Institutional Management and Administration	17	0	0	3	1
Food Service Systems	49	0	7	6	8
International Programs					
General	1	0	0	0	0

See footnotes at end of table.

Table 45--Home economics teaching and research faculty in higher education: 1979 sample employment and unfilled positions and 1989 projected average annual openings extrapolated for total population[1]--Continued

Teaching/research field	Sample response				Population estimate: 1980-89 projected average annual openings[5]
	Fall 1979 employment		Fall 1979 unfilled positions[3]	1980-89 estimated total retirements[4]	
	Total	Minorities[2]			
Textiles and Clothing					
General	210	9	46	37	53
Fashion Design	98	3	5	13	8
Retailing, Merchandising	113	5	25	16	28
Textile Science	90	8	13	10	15
Total	3,771	166	673	499	854

[1]Based on the "1979/80 Clemson University Survey of Students and Faculty in Higher Education in Home Economics," funded by the U.S. Department of Agriculture. Project directors were Dr. Edward L. McLean and Dr. Stephen R. Chapman.

[2]Includes racial and ethnic minorities employed by responding institutions; does not include white females.

[3]It was assumed that 50 percent of the reported unfilled positions represent openings, because of an unadjusted chronic shortage of faculty, and the rest represent unfilled positions because of turnovers, migration, and mobility. So, only the unfilled positions (50 percent) resulting from turnover, migration, and mobility were considered openings.

[4]Total retirements estimated by responding institutions, 1980-89.

[5]A sample estimate of average annual openings were computed as the sum of 50 percent of unfilled positions, plus estimated faculty retirements, for 1 year. That sample average annual estimate was then adjusted by the Clemson study response rate of 50.3 percent to represent average annual faculty openings in home economics for the total population.

Examples of Specific Jobs Representative of Selected OES-Census-Based Occupations included in the Occupational Cluster for Educators (Occupational Cluster #7)

1970-Census-of-Population code	Census occupation	Examples of specific jobs
141	Adult education teachers	Americanization teacher Chef, teacher Health teacher Home economics teacher Trade school teacher
143	Prekindergarten and kindergarten teachers	Day-care teacher Head start teacher Kindergarten teacher Nursery school teacher Pre-school teacher
145	Teachers, nec (except college and university)	Arts and crafts Childbirth and infant care Cooking Knitting Millinery Sewing Special eduation Weaving
174	Vocational education counselors	Boy's counselor Curriculum counselor Director of guidance Director of vocational guidance Education consultant Educational adviser Extension course counselor Resident hall director Teacher and counselor

Interpretation of Employment Opportunities for Educators

In addition to HEGIS and the OES-census-based matrix, several data bases were used to estimate the supply of and demand for educators. Use of such data bases was essential to develop valid estimates for home economics educators. Additional data sources included the National Education Association, the Cooperative Extension Services, the "1979/80 Clemson University Study of Students and Faculty in Higher Education in Home Economics," DOED's Office of Consumer and Home Economics Education, and the Association of Administrators of Home Economics.

Two conditions affect the estimation of the number of secondary home economics teachers needed through 1990. Of primary importance is the fact that secondary schools are changing curriculums so that instructional programs previously labeled as home economics now fall under the domain of such fields as physical and health education (nutrition, home nursing, and so forth), business education (consumer education), social sciences (family life, parenting, and so forth), or art (home decorating, textile weaving, and creative stitchery). Such courses frequently are taught by home economics education graduates. These curriculum developments further expand the demand for teachers beyond the traditional home economics subject-matter areas. However, BLS predicts that the secondary school population will continue to decrease through 1990. Consequently, BLS estimates a 22-percent decrease in the need for all secondary teachers within the next 10 years. Many leading experts in home economics education contend that a lesser change will occur with respect to secondary home economics teachers. This contention is based on changing curriculums of the nature cited. General indications are that the supply of and demand for secondary home economics teachers are balanced at this time, but the demand may decrease in the future. Although some secondary teaching positions presently remain unfilled, factors other than an inadequate supply likely are responsible. Such factors include salary, remote geographic location, unrest in inner-city schools, and generally more attractive job opportunities in other employment categories.

Home economics graduates who desire teaching positions at the preschool, kindergarten, and elementary school levels should encounter an expanding job market. Adult education employment opportunities are increasing also because of a growing appreciation for life-long learning and a growing tendency by business, industry, and government to offer noncredit instruction in such diverse areas as nutrition, family finance, interpersonal relationships, parenting, retirement planning, arts, and crafts. Likewise, vocational educational counseling is an expanding area of employment.

College and university faculty positions generally require a doctoral degree. Qualified professionals appear to be in extremely short supply. Major shortages exist relative to faculty in family and consumer resource management, food and nutrition, human environment and shelter, individual and family development, and textiles and clothing.

Although graduates with a baccalaureate and master's degree appear to be relatively adequate to fill the demand for the Cooperative Extension Services, shortages in the Services exist for graduates with doctoral degrees.

In summary, educators with home economics expertise appear to be adequate at the baccalaureate level and may exceed future demand if high school enrollments decrease as predicted. Master's graduates represent an ample but not excessive supply. The supply of doctoral gradu-

ates falls short of current and projected demands.

Overview of Supply/Demand Relationships

Stimulating the future growth of household-focused business and industry, developing the human-resources potential of individuals and families, and maximizing individual and family stability and security depend on a continuing supply of qualified home economics professionals. In essence, home economics graduates are uniquely capable of applying technical expertise, specific to sustaining the individual's and family's quality of life throughout a myriad of educational, governmental, and industrial programs, agencies, and units. In a highly industrial society, such as the United States, this type of expertise is critical to effectively using the vast amounts of information being generated, to selecting from an increasingly larger number of choices, to coping with rampant change, and to affecting mutually beneficial family-environment interface.

For example, in a May 7, 1979, address to a symposia in agricultural research, Dr. M. Rupert Cutler, Assistant Secretary of Agriculture, called attention to this situation:

> There is increasing evidence of a relationship between diet and many of the leading causes of death in the United States; that improved nutrition is an integral component of preventive health care; that a serious need exists for more research on the chronic effects of diet on degenerative diseases and related disorders; that there is insufficient knowledge concerning precise human nutrition requirements, the interaction of the various nutritional constituents of food, and differences in nutritional requirements among population groups; and that there is a critical need

for objective data concerning food safety, the potential of food enrichment, and means to encourage better nutritional practices.

Solutions to interrelated problems of this nature depend on concerted efforts undertaken cooperatively by medical scientists, epidemiologists, nutritionists, food scientists, and behavioral scientists working throughout the public and the private sectors. This study has endeavored to assess the extent to which graduates of higher education in home economics will be available, throughout the decade, to fill positions with government, industry, and education and to address problems of the nature cited.

Projected estimates through 1990 of supply/demand relationships for graduates of higher education in home economics differ by occupational cluster. When total supply is related to total demand for each of the seven occupational clusters investigated in the study, shortages of qualified graduates appear to exist for four clusters: Administrators and Managers; Design, Manufacturing, and Processing Specialists; Marketing, Merchandising, and Sales Personnel; and Scientific and Professional Specialists. Supply exceeds demand for three clusters: Media Specialists; Service Specialists; and Educators. However, with regard to Educators, it is important to note that, within the cluster, several supply deficiencies were identified.

As depicted in chart 2, average annual employment demand exceeds average annual supply by the largest percentage factors for occupational clusters representative of Administrators and Managers; Marketing, Merchandising, and Sales Personnel; and Design, Manufacturing, and Processing Specialists. For these particular occupational clusters, demand exceeds supply by 43, 26, and 22 percent, respectively. These shortages suggest both continuing and impending problems as the Nation strives to maintain adequate expertise in home economics.

Examination of actual average annual numbers of graduates as compared to average annual job openings reveals that the largest numerical shortages of workers are for those in the occupational clusters for Marketing, Merchandising, and Sales Personnel; Administrators and Managers; and Design, Manufacturing, and Processing Specialists. Cumulatively, these three clusters suggest average annual shortages of some 9,200 qualified graduates. Therefore, these occupational clusters would seem to offer significant employment opportunities for graduates in home economics.

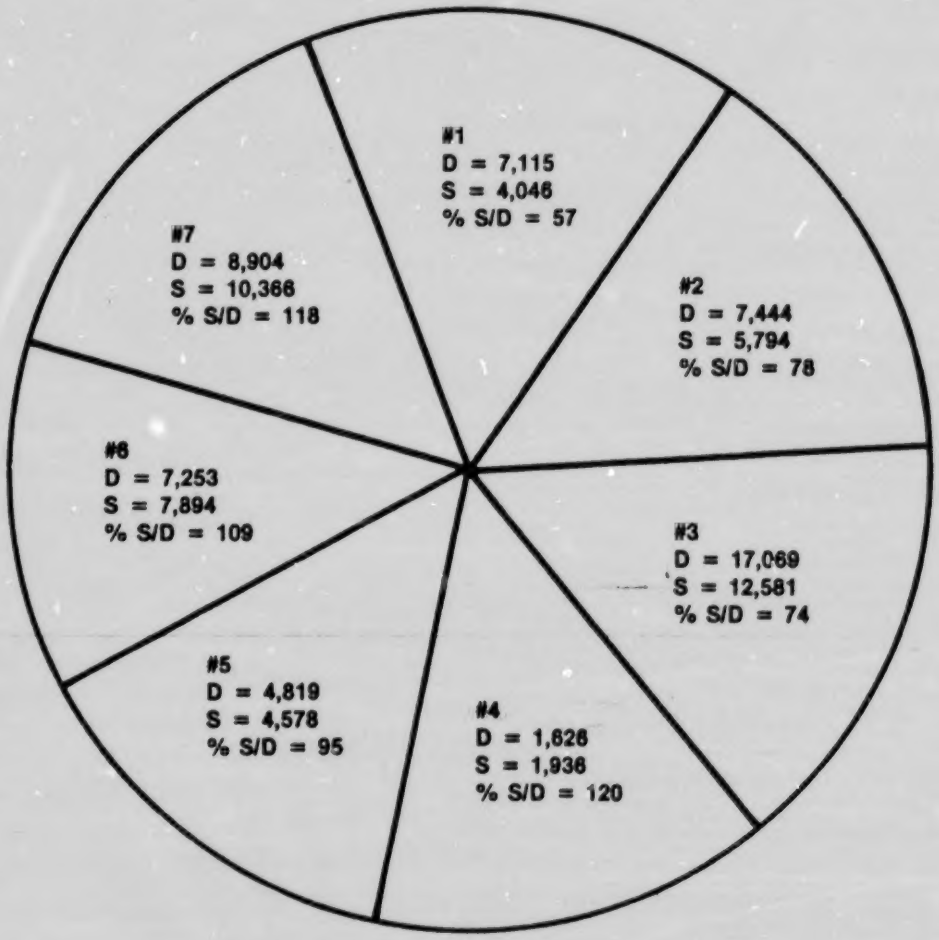
Supply/Demand Relationships by Degree Level and Type

Chart 3 summarizes supply/demand relationships by occupational cluster, degree type (home economics and home economics-related), and degree level (associate, baccalaureate, master's, and doctoral). For example, for Scientific and Professional Specialists (occupational cluster #5), the average annual number of home economics-degree recipients satisfies 55 percent of the demand; home economics-related graduates satisfy approximately 40 percent of the demand. Of the home economics-degree recipients, baccalaureates satisfy 47 percent of the demand. Master's and doctoral recipients satisfy only 8 percent of employment demand.

Degree level and type, requisite to occupational employment, are empirical unknowns. Nevertheless, it seems important to assess the extent to which recipients of different types and levels of degrees are available to meet employment demand. Relationships are shown in chart 3 to the extent that the assumptions and estimations underlying this study (for example, percent distribu-

Chart 2

Supply/demand relationships of recipients of home economics and home economics-related degrees to total employment demand, by occupational cluster, 1977-90*



D = Demand
S = Supply

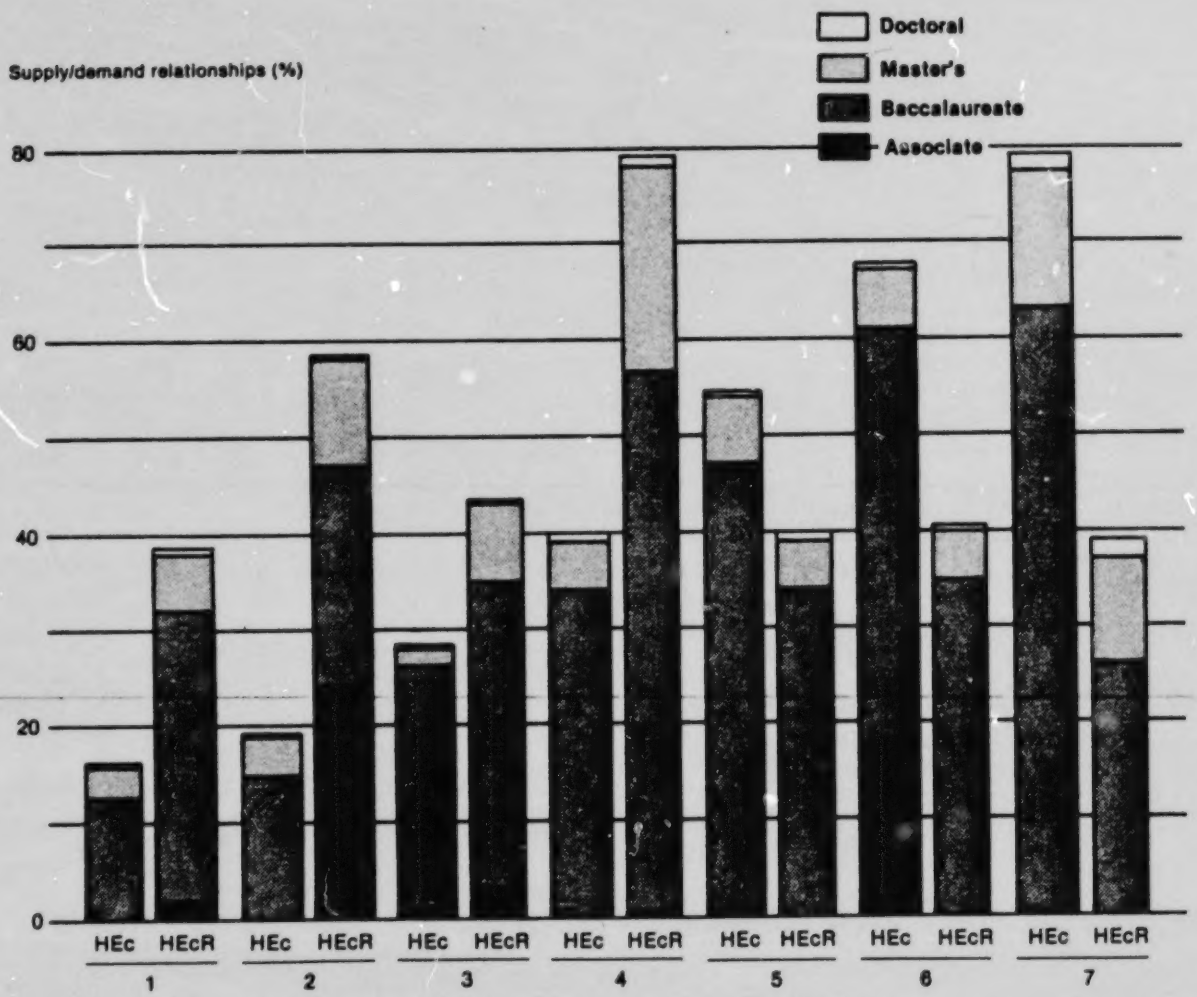
*Average annual supply expressed as a percentage of average annual demand from 1977/78 through 1989/90

Occupational Clusters

1. Administrators and Managers
2. Design, Manufacturing, and Processing Specialists
3. Marketing, Merchandising, and Sales Personnel
4. Media Specialists
5. Scientific and Professional Specialists
6. Service Specialists
7. Educators

Chart 3

Relationship of the total supply of home economics and home economics-related degrees to total employment demand by occupational cluster and degree level, 1977-90, associate through graduate degrees



*Average annual supply expressed as percent of average annual demand from 1977 through 1990. Because projections are unavailable for associate degrees, 1977/78 supply data were used in place of average annual estimates for associate-degree recipients.

Occupational Cluster

1. Administrators and Managers
2. Design, Manufacturing, and Processing Specialists
3. Marketing, Merchandising, and Sales Personnel
4. Media Specialists
5. Scientific and Professional Specialists
6. Service Specialists
7. Educators

tions of graduates of the educational clusters among the occupational clusters) are accurate. As illustrated in the chart, associate-degree graduates should be available through 1989/90 to fill employment demand as follows: 24 percent of Design, Manufacturing, and Processing Specialist occupations; 18 percent of Service Specialist occupations; 5 percent of Marketing, Merchandising, and Sales Personnel positions; 2 percent of positions for Administrators and Managers; and 1 percent of Media occupations.

The extent to which baccalaureate graduates should be available to fill employment demand ranges from 38 percent for Design, Manufacturing, and Processing Specialists (occupational cluster #2) to 90 percent for Media Specialists (occupational cluster #4). With regard to employment demand for Educators and the finding that baccalaureate graduates should be available to fill 89 percent of all job openings, it is not practical to assume that baccalaureate graduates are qualified to fill many such positions (for example, college and university teaching positions and State specialists with the Cooperative Extension Services). Furthermore, past history has shown that large numbers of these graduates are qualified for and elect career options other than education. As a result, many job openings in education remain unfilled on a continuing basis.

While substantial employment opportunities are projected through 1990 for baccalaureate graduates in home economics, the greatest need for additional graduates at this level appears to be that related to Design, Manufacturing, and Processing Specialists and to Marketing, Merchandising, and Sales Personnel. Degree specializations which appear to be in greatest demand include Business, Family/Consumer Resource Management, Food Service Management and Institutional Management, Food Science and Human Nutrition, Human Environment and Shelter, and Textiles and Clothing.

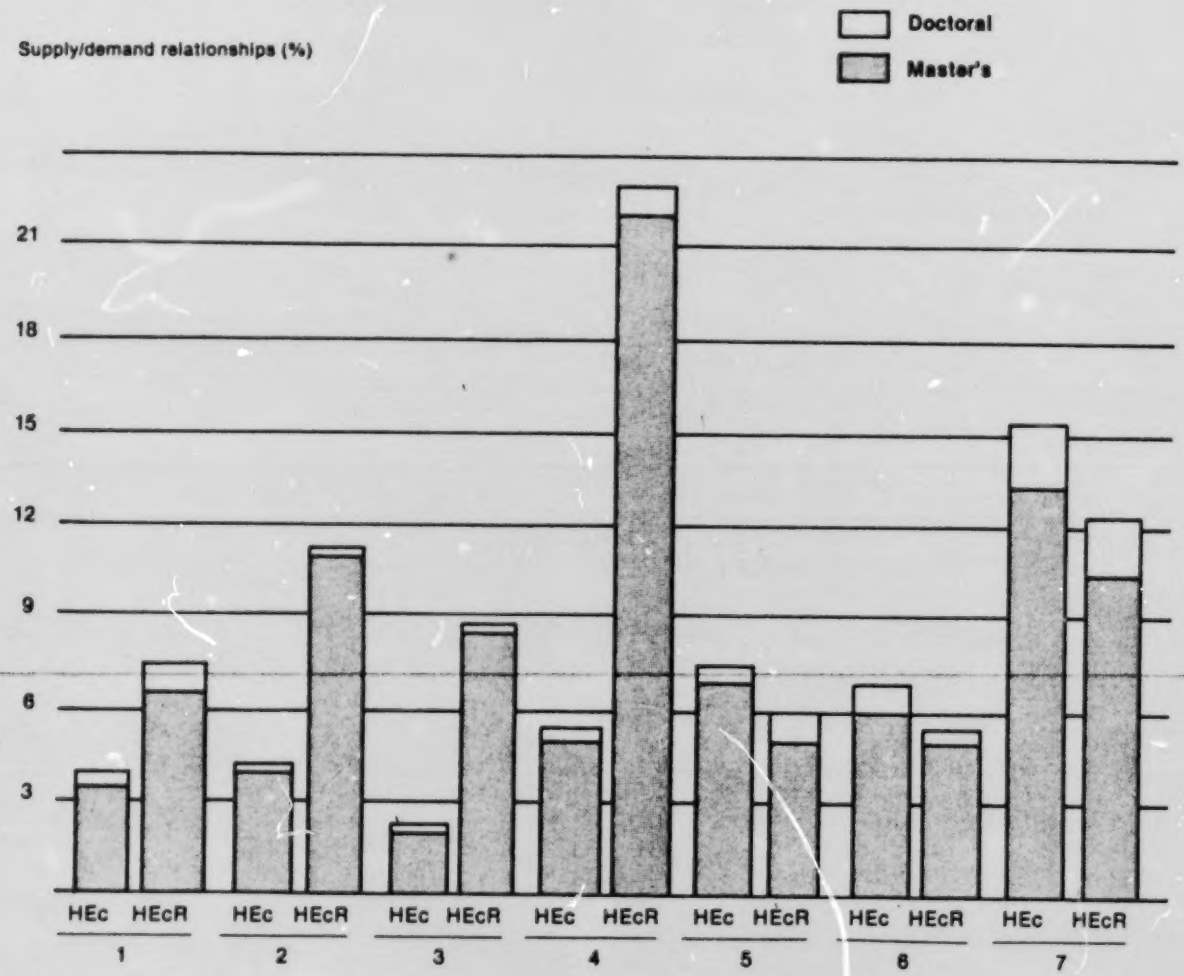
Advanced-degree recipients should be available to satisfy from 11 percent to 29 percent of the demand for the various occupational clusters. This information is presented in greater detail in chart 4. Considering the nature of the occupations within the seven occupational clusters, the adequacy of the supply of graduate-degree recipients is questionable for several of the clusters.

Current and projected master's graduates would seem to be in short supply (S) for the employment demand (D) related to Administrators and Managers (S/D percent=10), Marketing, Merchandising, and Sales Personnel (S/D=10 percent), Scientific and Professional Specialists (S/D percent = 12), and Design, Manufacturing, and Processing Specialists (S/D percent=15). Again, those degree specializations which appear to be in greatest demand are Business, Food Science and Human Nutrition, Food Service Management and Institutional Management, Textiles and Clothing, Family and Consumer Resource Management, and Human Environment and Shelter.

Annually through 1989/90, the supply of doctoral graduates is estimated to be inadequate across the full spectrum of home economics. The limited number of total doctoral graduates projected from 1980/81 through 1989/90 (3,060 in home economics and 3,800 in home economics-related fields) is exceeded substantially by employment demand for Administrators and Managers; Design, Manufacturing, and Processing Specialists; Educators (college and university faculty and Extension personnel); Scientific and Professional Specialists; and Service Specialists. This serious, continuing supply/demand imbalance relative to the highest levels of expertise in home economics stands to further restrict

Chart 4

Relationship of the supply of recipients of home economics and home economics-related graduate degrees to total employment demand, by occupational cluster and degree level, 1977-90



Occupational Cluster

*Average annual supply expressed as percent of average annual demand from 1977/78 through 1989/90.

1. Administrators and Managers
2. Design, Manufacturing, and Processing Specialists
3. Marketing, Merchandising, and Sales Personnel
4. Media Specialists
5. Scientific and Professional Specialists
6. Service Specialists
7. Educators

progress toward national priorities and goals associated with improving quality of life for individuals and families.

Future Directions

This USDA study has entailed a comprehensive analysis of the supply of and demand for higher education graduates in home economics. Because both educational and employment patterns are subject to change and because the methodology for this study relied heavily on expert opinion, future replications of labor supply/demand analyses need to be conducted on an ongoing basis. Such replications should serve to strengthen the methodology as well as to provide continually updated supply/demand statistics for purposes of educational planning.

Much has been accomplished in the conduct of this study toward establishing a model for future iterations. However, there are many possibilities for strengthening the research model, for improving data bases used in the analysis, and for examining special segments of the supply/demand population in greater detail. Briefly, this section addresses possible future directions for improving the technical quality and specificity of the information.

First, this initial study was constrained because of certain limitations in existing data sources that could not be overcome during the time in which the study was conducted. Future efforts should focus on correcting some of these limitations. For example--

a. BLS's Occupational Employment Statistics (OES) Program has not yet completed a national OES-survey-based Industry-Occupation (I-O) Matrix. In lieu of a survey-based matrix, a census-based matrix was used for the USDA study. In the future, however, an OES-survey-based I-O matrix will be available for use, thus providing substantially more occupational and industrial detail than was possible by using the census-based matrix.

b. No existing data base presently accommodates comprehensive analysis of the labor force mobility of higher education graduates in home economics. Longitudinal employment mobility information on these graduates needs to be acquired.

Second, the use of expert opinion could be minimized in future studies if sound data bases were available pertaining to career placement of home economics graduates and to educational backgrounds of workers in specific occupations/industries.

a. The National Center for Education Statistics conducts a Survey of Recent College Graduates. These biennial surveys could be expanded to provide detailed information specific to the labor-market experiences of higher education graduates in home economics.

b. Industry surveys of the educational backgrounds of workers could establish a data base on the actual percentage of workers in the occupations within the various industries who possess academic backgrounds in home economics.

Third, the home economics profession needs to make a concerted effort to initiate development of those national data bases which are essential to supply/demand assessments of graduates and which are concealed as a result of aggregations in existing data bases, yet are requisite to sound educational planning. These include--

a. Annual degrees conferred by all colleges and universities at the baccalaureate, master's, and doctoral levels in Home Economics Education.

b. Annual level of employment, employment growth, and replacement needs for college-and-university teaching-and-research faculty in each of the disciplines comprising the broad field of home economics, using instrumentation compatible with the HEGIS taxonomy.

c. Annual level of employment, employment growth, and replacement needs for secondary home economics teachers.

Implementing these suggestions would serve to strengthen future supply/demand analyses. As a result, educational planning, administration, and evaluation would have access to more precise, reliable information on which to base policy development and action.

CHAPTER IV
Additional Information on Employment Opportunities for Home Economics Graduates

International Employment Opportunities

In addition to the employment demand reported in chapter II for home economics and related graduates of higher education, other career opportunities exist in the international arena and with the Armed Services.

A summary of international food and agricultural employment of U.S. citizens was included in volume I of this series.[1/] Although this summary information is not specific to home economics, several of the fields of employment analyzed suggest requisite expertise comparable to that acquired through a degree specialization in home economics. For example, agricultural education may include home economics and consumer education. Food sciences may include food technology, human nutrition, and dietetics.

As developing nations strive to enhance family and individual welfare and as U.S. firms continue to develop multinational operations, it may be anticipated that home economics and related graduates of higher education will experience expanding international employment opportunities.

Within the realm of higher education, several implications appear to be warranted. These include the need to: (1) strengthen the capacities of colleges and universities to respond to international concerns through education and research, (2) produce graduates with international expertise acquired through specialized and multidisciplinary learning experiences, and (3) apprise students of opportunities for international

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1/ *Coulter, K. J., and M. Stanton (ed). "Graduates of Higher Education in the Food and Agricultural Sciences: An Analysis of Supply/Demand Relationships, Volume I--Agriculture, Natural Resources, and Veterinary Medicine," USDA, SEA, Pub. No. 1385, July 1980.*

employment. Specific to higher education in home economics, additional emphasis must be placed on helping students apply home economics disciplines in different social, political, and economic milieu. Likewise, attention must be directed toward providing students with greater exposure to international policy development, international educational and research methodologies, and principles of technology development and dissemination.

Employment Opportunities with the Armed Services

Civilian and military personnel are employed in many duty positions suggesting requisite expertise in home economics. The panel of consultants reviewed the U.S. Department of Defense (DOD) occupation codes and selected specific duty positions within each of the Armed Services divisions that appear to use personnel with home economics and related expertise. The Defense Manpower Data Center, DOD, provided current personnel figures for each selected duty position. These data, classified by Armed Services division, are shown in table 46. Part I of the table displays frequencies for occupation groups and related duty positions designated for enlisted and comparable civilian personnel. Part II displays similiar frequencies for those positions designated for commissioned officers and comparable civilian personnel.

It should be noted that frequencies denote the number of personnel in each duty position without regard to type of educational background. For duty positions, such as dietitian, diet-therapy specialist, and home economist, it may be assumed that a preponderance of personnel possess higher education in home economics and related disciplines. However, for duty positions, such as consumer safety specialist, clothing designer, and housing manager, only a selected percentage of personnel may be expected to have acquired higher education in home economics and related disciplines.

Interpretation of these DOD data suggests that the Armed Services use a broad spectrum of personnel with competencies often acquired through higher education in home economics. Although these personnel are limited in number, they, nevertheless, suggest frequently overlooked career opportunities and employment demands for graduates.

Table 46--Military and civilian personnel in Armed Services occupations that use home economics and related expertise[1/]

DOD occupation group code	Occupation group	Selected duty position within the Armed Services division			
		Armed Services division	Duty position code	Duty position	Personnel frequency[2/]
Part I: Enlisted and civilian personnel					
300	Medical care and treatment, general	Civilian	GS-0699	Health aid technician	1,114
302	Mental care	Air Force	914X0	Mental health clinic specialist	334
		Army	91G	Behavioral sciences specialist, child and family	7,770
321	Food inspection and veterinary services	Civilian	GS-1863	Food inspection	0
322	Preventative medicine services	Air Force	907X0	Environmental health specialist	47*
			90700	Environmental health manager	2*
		Army	91S	Environmental health specialist	62*
		Civilian	GS-0698	Environmental health technician	67
493	Safety	Civilian	GS-1862	Consumer safety specialist	0
496	Other technical specialists and technicians	Army	01H	Biological sciences assistant	176
		Civilian	GS-0021	Community planning technician	5
			GS-0102	Social science aid and technician	35
			GS-0162	Clothing design	13
			GS-0404	Biological technician	533
500	Personnel, general	Army	00U	Race relations, EEO specialist	741
		Navy	9528	Human resources management specialist	379

See footnotes at end of table.

Table 46--Military and civilian personnel in Armed Services occupations that use home economics and related expertise[1]--Continued

DOD occupation group code	Occupation group	Selected duty position within the Armed Services division			
		Armed Services division	Duty position code	Duty position	Personnel frequency[2]
Part I: Enlisted and civilian personnel (Continued)					
501	Recruiting and Navy counseling	Navy	9522	Drug abuse counselor	24
			9585	Recruiter/career counselor	3,694
			9588	Career counselor	2,691
			9589	Command career information counselor coordinator	1
562	Recreation and welfare	Civilian	GS-1056	Art specialist	156
800	Food service, general	Air Force	612X0	Meat cutter	185
			61200	Subsistance manager	3
			61270	Meat processing supervisor	19
			622X0	Food service specialist	105*
			622X1	Diet therapy specialist	31*
			62299	Food services supervisor	17*
			742X0	Open mess management specialist	542
			74200	Open mess general manager	17
		Army	00J	Club manager	688
			94B	Food service specialist	693*
			94F	Hospital food service specialist	53*
		Civilian, wage	74001	Miscellaneous food preparation and service	16
			74002	Baker	176
			74004	Cook	2,240
			74007	Meat cutter	3,001
			74008	Food service worker	6,091
			74065	Meat wrapping	69
			74250	Commissary supervisor	5

See footnotes at end of table.

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Table 46--Military and civilian personnel in Armed Services occupations that use home economics and related expertise[1]--Continued

DOD occupation group code	Occupation group	Selected duty position within the Armed Services division			
		Armed Services division	Duty position code	Duty position	Personnel frequency[2]
Part I: Enlisted and civilian personnel (Continued)					
800	Food Service, general (continued)	Marines	3311	Baker	7*
			3371	Cook	36*
			3372	Cook, specialist	35*
			3381	Food service technician	2*
			4132	Club manager/treasurer	10*
		Navy	3500	Mess management specialist	149*
			3529	Wardroom/general mess supervisor	6
			3533	Galley/pantry watch captain	4
			3535	Store meat and produce department	0
			3537	Commissary meat cutter	1
801	Stewards and enlisted aids	Civilian	GS-0673	Hospital housekeeping management	38
			GS-1666	General housekeeping	7
		Navy	3524	Independent duty store keeper	3*
840	Laundry and personal services	Army	57E	Laundry and bath specialist	802
Part II: Officers and civilian personnel					
3a	Intelligence, general	Air Force	8021	Human resources intelligence officer, training	13
			8024	Human resources intelligence officer	39*
5a	Physical scientists	Air Force	2645	Chemist, biologist	98*
		Navy	840	Biochemist	19*
5c	Biological scientists	Air Force	9626	Scientist medical, biomedical	4*

See footnotes at end of table.

Table 46--Military and civilian personnel in Armed Services occupations that use home economics and related expertise[1]--Continued

DOD occupation group code	Occupation group	Selected duty position within the Armed Services division			
		Armed Services division	Duty position code	Duty position	Personnel frequency[2]
Part II: Officers and civilian personnel (Continued)					
5c	Biological scientists (continued)	Army	68C	Biochemist	67*
			68J	Physiologist	20
		Navy	841	Microbiologist	44*
			848	Physiologist	9*
5h	Social work	Air Force	9191	Clinical social worker	34*
			9196	Clinical social worker	144*
		Army	68R	Social work officer	209
		Civilian	GS-0185	Social work	204*
		Navy	868	Social work	1
5k	Educators and instructors	Civilian	GS-1710	Education and vocational training	12,984
			GS-1725	Public health educator	0*
5n	Scientists and professionals, nec	Civilian	GS-1382	Food technology	43*
			GS-1384	Textile technology	62*
			GS-0493	Home economics	16*
6h	Allied medical	Air Force	9211	Dietitian, training	6*
			9216	Dietitian	65*
		Army	65C	Hospital dietitian	155*
		Civilian	GS-0630	Dietitian	21*
		Navy	876	Dietitian, therapeutic	21*
7b	Training administrators	Civilian	GS-1701	General education and training	153*
7m	Medical administrators	Air Force	9016	Health services administrator, staff	450*
			9025	Health services administrator	589*
		Civilian	GS-0685	Public health program specialist	1*
8e	Food service	Air Force	6241	Food service officer	25*
			6244	Food service officer	22*
		Army	43A	Club manager	166
			82A	Food management officer	40*
			82C	Food advisor	32*

See footnotes at end of table

Table 46--Military and civilian personnel in Armed Services occupations that use home economics and related expertise[1]--Continued

DOD occupation group code	Occupation group	Selected duty position within the Armed Services division			
		Armed Services division	Duty position code	Duty position	Personnel frequency[2]
8e	Food Service	Army (cont'd.)	82D	Commissary management officer	
		Civilian	GS-0120	Food assistant program specialist	0*
		Marines	3302	Food services officer	11*
			3310	Food service operation officer	0
		Navy	0814	Food service officer, medical facility	32
			1105	Mess treasurer	76
			1130	Food service officer	87*
			1160	Food service administrator	7*
8g	Other	Army	92C	Laundry and bath officer	67
		Civilian	GS-1173	Housing management	1,234

* = All personnel reported possess 2 or more years of college. Absence of an asterisk denotes insufficient information to assess education level.

0 = No personnel in duty position at time of frequency tabulation. Armed Services may or may not be seeking personnel.

[1] Data supplied by the Defense Manpower Data Center (DMDC), Department of Defense (DOD). Frequency tabulations were accessed from the DMDC files June 1979-October 1980.

[2] Frequency denotes total personnel in duty position without regard to type of educational background.

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Appendixes

Appendix 1--Panel of consultants representing higher education in home economics

Name of consultant	Position	Affiliation
Norma Bobbitt, Ed.D	Assistant Dean, College of Human Ecology	Michigan State University, East Lansing, Michigan
Virginia Caples, Ph.D	Associate Dean, School of Agriculture, Environmental Science and Home Economics	Alabama A. & M. University, Normal, Alabama
Gwen Cooke, Ph.D	Director, School of Family Studies and Consumer Sciences	San Diego State University, San Diego, California
Jane M. Lillestol, Ph.D[1/]	Associate Dean, College of Home Economics	North Dakota State University, Fargo, North Dakota
Helen F. McHugh, Ph.D	Dean, College of Home Economics	Colorado State University, Ft. Collins, Colorado
Lura Odland, Ph.D	Professor, Nutrition and Public Policy, Dean Emeritus (1979), College of Home Economics	University of Tennessee, Knoxville, Tennessee
Marjorie E. Rankin, M.S.	Dean, Nesbitt College	Drexel University, Philadelphia, Pennsylvania
Patricia B. Swan, Ph.D[2/]	Program Coordinator, Program Planning Staff, Human Nutrition	U.S. Department of Agriculture, Science and Education Administration, Joint Planning and Education, Washington, D.C.

1/ Currently: Dean, College of Human Development, Syracuse University, Syracuse, New York.

2/ Currently: Professor, Department of Food Science and Nutrition, University of Minnesota, St. Paul, Minnesota.

Appendix 2-1--Baccalaureate and higher degrees leading to expertise in home economics and related fields and percent of graduates deemed qualified for employment in home economics-related occupations[1/]

Academic subdivisions based on HEGIS taxonomy	Percent of qualified graduates[2/]		
	Baccalaureate	Master's	Doctoral
0100 Agriculture and Natural Resources			
0104 Animal science (husbandry)	0	0	-
0105 Dairy science (husbandry)	0	0	1
0106 Poultry science	0	0	15
0111 Agricultural economics	0	0	15
0112 Agricultural business	0	0	5
0113 Food science and technology	100	100	100
0200 Architecture and Environmental Design			
0201 Environmental design, general	20	20	20
0203 Interior design	100	100	100
0206 City, community, and regional planning	25	25	25
0400 Biological Sciences			
0403 Bacteriology	1	2	2
0411 Microbiology	1	2	2
0414 Biochemistry	0	0	1
0424 Nutrition, scientific (excludes nutrition in home economics dietetics)	100	100	100
0426 Toxicology	0	0	2
0500 Business and Management			
0504 Banking and finance	10	5	0
0506 Business management and administration	15	10	10
0508 Hotel and restaurant management	100	100	100
0509 Marketing and purchasing	1	0	0
0600 Communications			
0601 Communications, general	.5	.5	0
0602 Journalism (printed media)	.5	.5	0
0603 Radio/television	1	1	0
0605 Communication media (use of videotape films, etc., oriented specifically toward radio/TV)	1	1	0
0800 Education			
0805 Higher education, general	0	0	1
0807 Adult and continuing education	0	5	10
0823 Pre-elementary education (kindergarten)	75	50	50
0827 Educational administration	0	0	1
0837 Health education (includes family life education)	.5	.5	0
0899-3 Other: Home economics education	100	100	100

See footnotes at end of appendix 2-2.

Appendix 2-1--Baccalaureate and higher degrees leading to expertise in home economics and related fields and percent of graduates deemed qualified for employment in home economics-related occupations--Continued

Academic subdivisions based on HEGIS taxonomy	Percent of qualified graduates[2/]		
	Baccalaureate	Master's	Doctoral
0900 Engineering			
0906 Chemical engineering (includes petroleum refining)	1	1	1
1000 Fine and Applied Arts			
1009 Applied design (ceramics, weaving, textile design, fashion design, jewelry, metalsmithing, interior decoration--commercial)	25	10	1
1200 Health Professions			
1214 Public health	0	10	1
1300 Home Economics			
1301 Home economics, general	100	100	100
1302 Home decoration and home equipment	100	100	100
1303 Clothing and textiles	100	100	100
1304 Consumer economics and home management	100	100	100
1305 Family relations and child development	100	100	100
1306 Foods and nutrition (includes dietetics)	100	100	100
1307 Institutional management and cafeteria management	100	100	100
1390 Home economics communication[3/]	100	100	100
1399 Other: Business home economics[4/]	100	100	100
2000 Psychology			
2009 Developmental psychology	0	5	5
2200 Social Sciences			
2204 Economics	0	0	1
2208 Sociology	0	2	2

See footnotes at end of appendix 2-2.

Appendix 2-2--Associate degrees leading to expertise in home economics and related fields and percent of graduates deemed qualified for employment in home economics-related occupations[1/]

Academic subdivisions based on HEGIS taxonomy	Percent of qualified associate graduates[2/]
5000 Business and Commerce Technologies	
5004 Marketing, distribution, purchasing, business, and industrial management technologies	5
5008 Communications and broadcasting technologies (radio/television, newspapers)	1
5010 Hotel and restaurant management technologies	5
5200 Health Services and paramedical Technologies	
5218 Institutional management technologies (rest home, etc.)	5
5400 Natural Science Technologies	
5404 Food services technologies	100
5405 Home economics technologies	100

Footnotes for appendixes 2-1 and 2-2:

[1/] Huff, Robert A., and Marjorie O. Chandler, "A Taxonomy of Instructional Programs in Higher Education," National Center for Education Statistics, U.S. Department of Health, Education and Welfare, 1970.

[2/] Percentages reflect expert opinion of the panel of consultants and are assumed valid through 1989.

[3/] Arbitrary code established to categorize degrees granted in Home Economics Communications as indicated by a review of HEGIS raw data recorded under "1399:Other."

[4/] The HEGIS raw data for "1399:Other" were reviewed and were assigned to fields 1301-1307 when they appeared to represent such degree specializations. The rest were deemed primarily to represent degree specializations pertaining to Business Home Economics.

Appendix 3--Assignment of HEGIS degree specializations to educational clusters

Initially, HEGIS degrees which lead to expertise in home economics and closely related fields were selected (appendix 2). Subsequently, the following 11 educational clusters were established for the purpose of categorizing home economics and home economics-related degrees according to educational emphasis. In instances when a given degree leads to expertise in multiple clusters, selected percentages of the graduates were assigned to the appropriate clusters.

General Home Economics (educational cluster #1)

Home economics degrees		Home economics-related degrees
1301	Home economics, general	(not applicable)

Business (educational cluster #2)

Home economics degrees		Home economics-related degrees	
1399	Home economics, other[1/]	0112	Agricultural business
		0504	Banking and finance (10%)
		0506	Business management and administration (30% bachelor's; 100% master's and doctorates)
		0509	Marketing and purchasing (30%)
		5004	Marketing, distribution, purchasing, business, and industrial management technologies (50%)

Family and Community Services (educational cluster #3)

Home economics degrees		Home economics-related degrees	
5405	Home economics technologies	0807	Adult and continuing education (60%)
		0206	City, community, and regional planning (10%)
		0201	Environmental design, general (10%)
		1214	Public health (10%)

Family/Consumer Resource Management (educational cluster #4)

Home economics degrees		Home economics-related degrees	
1304	Consumer economics and home management	0111	Agricultural economics
		0504	Banking and finance (90%)
		0506	Business management and administration (5% bachelor's)
		2204	Economics
		0509	Marketing and purchasing (10%)

See footnotes at end of table.

Appendix 3--Assignment of HEGIS degree specializations to educational clusters--Continued

Food Service Management and Institutional Management (educational cluster #5)

Home economics degrees		Home economics-related degrees	
1307	Institutional management and cafeteria management	0408	Bacteriology (28%)
		0506	Business management and administration (20% bachelor's)
		5404	Food services technologies
		0508	Hotel and restaurant management
		5010	Hotel and restaurant management technologies
		5218	Institutional management technologies
		0509	Marketing and purchasing (20%)
		0411	Microbiology (30%)
		0426	Toxicology (10%)

Food Science and Human Nutrition (educational cluster #6)

Home economics degrees		Home economics-related degrees	
1306	Food and nutrition (includes dietetics)	0104	Animal science
		0403	Bacteriology (70%)
		0414	Biochemistry
		0506	Business management and administration (10% bachelor's)
		0906	Chemical engineering (60%)
		0105	Dairy science
		0113	Food science and technology
		0509	Marketing and purchasing (10%)
		0411	Microbiology (70%)
		0424	Nutrition, scientific--excludes nutrition in home economics and dietetics
		0106	Poultry science
		1214	Public health (90%)
		0426	Toxicology (80%)

See footnotes at end of table.

Appendix 3--Assignment of HEGIS degree specializations to educational clusters-Continued

Home Economics Communications (educational cluster #7)

Home economics degrees		Home economics-related degrees	
1390	Home economics communication[1/]	0605	Communication media--use of videotapes, films, and so forth, oriented specifically toward radio/television
		5008	Communications and broadcasting technologies
		0601	Communications, general
		0602	Journalism--printed media
		0603	Radio/television

Home Economics Education (educational cluster #8)

Home economics degrees		Home economics-related degrees	
0899-3	Home economics education[2/]	0807	Adult and continuing education (40%)
		0827	Educational administration
		0837	Health education--includes family life education
		0805	Higher education, general

Human Environment and Shelter (educational cluster #9)

Home economics degrees		Home economics-related degrees	
1302	Human environment and shelter	1009	Applied design--ceramics, weaving, textile design, fashion design, jewelry, metal-smithing, interior decoration (50%)
		0506	Business management and administration (5% bachelor's)
		0206	City, community and regional planning (90%)
		0201	Environmental design, general (90%)
		0203	Interior design

See footnotes at end of table.

Appendix 3--Assignment of HEGIS degree specializations to educational clusters-Continued

Individual and Family Development (educational cluster #10)

Home economics degrees		Home economics-related degrees	
1305	Family relations and child development	2009	Developmental psychology
		0823	Pre-elementary education--kindergarten
		2208	Sociology

Textiles and Clothing (educational cluster #11)

Home economics degrees		Home economics-related degrees	
1303	Clothing and textiles	1009	Applied design (50%)
		0403	Bacteriology (2%)
		0506	Business management and administration (30% bachelor's)
		0906	Chemical engineering (40%)
		0509	Marketing and purchasing (30%)
		5004	Marketing, distribution, purchasing, business, and industrial management technologies (50%)
		0426	Toxicology (10%)

1/ The HEGIS raw data for "1399: Other" were reviewed and were assigned to 1301-1307 when they appeared to represent such degree specializations; to the arbitrary code of 1390 when they were communications degree specializations; and to 1399 when deemed primarily degree specializations pertaining to business.

2/ Based on data from the Office of Consumer and Home Economics Education, U.S. Department of Education and from the Association of Administrators of Home Economics.

Appendix 4--1977/78 and projected 1989/90 supply of home economics and home economics-related graduates classified by educational cluster and degree level[1,2,3]

Educational cluster and degree type	Degree level and academic year									
	Associate		Baccalaureate		Master's		Doctoral		Total	
	1977/78	1989/90	1977/78	1989/90	1977/78	1989/90	1977/78	1989/90	1977/78	1989/90
General										
Home economics	--	--	505	518	112	150	1	2	618	670
Home economics-related	--	--	--	--	--	--	--	--	--	--
Business										
Home economics	--	--	51	51	7	9	0	0	58	60
Home economics-related	452	452	2,454	3,025	2,593	2,711	54	50	5,553	3,798
Family and Community Services										
Home economics	1,321	1,321	--	--	--	--	--	--	1,321	1,321
Home economics-related	--	--	34	33	75	85	9	7	118	125
Family/Consumer Resource Management										
Home economics	--	--	885	904	139	184	18	32	1,042	1,120
Home economics-related	--	--	966	1,191	148	156	14	14	1,128	1,361
Food Service Management and Institutional Management										
Home economics	--	--	609	624	74	97	0	0	683	721
Home economics-related	1,972	1,972	3,183	3,875	165	165	1	4	5,323	6,016
Food Science and Human Nutrition										
Home economics	--	--	3,949	4,034	724	962	48	81	4,721	5,077
Home economics-related	--	--	1,750	2,141	515	606	205	205	2,470	2,952
Home Economics Communications										
Home economics	--	--	25	26	0	0	0	0	25	26
Home economics-related	14	14	140	184	17	19	0	0	171	217
Home Economics Education										
Home economics	--	--	3,390	3,390	457	457	55	55	3,902	3,902
Home economics-related	--	--	8	14	20	24	23	20	51	58
Human Environment and Shelter										
Home economics	--	--	1,061	1,089	51	64	0	0	1,112	1,157
Home economics-related	--	--	1,802	1,937	272	251	11	11	2,085	2,199

See footnotes at end of table

Appendix 4--1977/78 and projected 1989/90 supply of home economics and home economics-related graduates classified by educational cluster and degree level[1,2,3]--Continued

Educational cluster and degree type	Degree level and academic year									
	Associate		Baccalaureate		Master's		Doctoral		Total	
	1977/78	1989/90	1977/78	1989/90	1977/78	1989/90	1977/78	1989/90	1977/78	1989/90
Individual and Family Development										
Home economics	--	--	3,824	3,907	846	1,129	101	173	4,771	5,209
Home economics-related	--	--	3,002	2,251	763	586	71	61	3,836	2,898
Textiles and Clothing										
Home economics	--	--	3,655	3,681	177	236	18	31	3,850	3,948
Home economics-related	453	453	2,429	2,910	19	21	1	1	2,902	3,385
Totals										
Home economics	1,321	1,321	17,954	18,224	2,587	3,292	241	374	22,103	23,211
Home economics-related	2,891	2,891	15,768	17,561	4,587	4,624	391	373	23,637	25,449
Total	4,212	4,212	33,722	35,785	7,174	7,916	632	747	45,740	48,660

-- = No degree specializations selected. 0 = No graduates reported/anticipated.

1/ 1977/78 supply is based on HEGIS data except for Home Economics Education. That educational cluster used data provided by the Office of Consumer and Home Economics Education, DOED (bachelor's level) and by AAHE (master's and doctoral levels).

2/ Based on NCES projections. Associate degrees were treated as stable since NCES projections are not computed for that degree level.

3/ Includes only those graduates available to enter the labor force; does not include those who are predicted to return to their native country, continue their education, elect not to enter the labor force, or, who seek employment in a field unrelated to their academic background.

Appendix 5--Percent of HEGIS general degrees estimated by panel of consultants as legitimate generalist degrees

HEGIS code	Academic subdivision	Degree level		
		Baccalaureate	Master's	Doctoral
		Percent		
0101	Agriculture, general	5	2	0
0201	Environmental design, general	80	80	30
0401	Biology, general	80	100	0
0402	Botany, general	100	90	80
0407	Zoology, general	100	90	80
0501	Business and commerce, general	80	50	20
0601	Communications, general	100	90	90
0801	Education, general	100	100	100
0805	Higher education, general	100	100	100
0901	Engineering, general	90	10	20
1001	Fine arts, general	75	2	0
1201	Health professions, general	90	90	90
1301	Home economics, general	10	12	2
2001	Psychology, general	100	70	60
2201	Social sciences, general	100	100	100

Appendix 6--OES-census-based occupations used in project with corresponding 1970 OES-census matrix codes and census-of-population codes

Occupation	1970-census matrix code	OES-census-of-population code
Actuaries	10060050	34
Adult education teachers	10200050	141
Advertising agents, sales workers	30000050	260
Agricultural and biological technicians (except health)	10080050	150
Agricultural scientists	10040050	42
Archivists and curators	10240150	33
Attendants, personal service, nec[1/]	70080150	933
Authors	10220150	181
Bakers	50140050	402
Bank, financial managers	20020050	202
Biological scientists	10040150	44
Buyers, wholesale, retail	20020200	205
Checkers, examiners, and inspectors; manufacturing	61060050	610
Chemical technicians	10080100	151
Chemists	10040200	45
Child care workers (except private)	70080400	942
College and university teaching and research faculty	N/A[2/]	N/A[2/]
Computer programmers	10160050	3
Cooks (except private)	70040150	912
Cooperative extension service personnel	N/A[3/]	N/A[3/]
Cutting operative, nec	61080350	612
Decorators, window dressers	50140250	425
Demonstrators	30000150	262
Designers (for example, costume designers)	10220250	183
Dietitians	10100150	74
Drafters	10080150	152
Dressmakers (except factory)	61080400	613
Economists	10180050	91
Editors and reporters	10220300	184
Elementary school teachers	10200550	142
Engineering, science technicians, nec	10080450	162
Estimators, investigators, nec	40060550	321
Expeditors, product controllers	40060600	323
Furriers	50140400	444
Health aides (except nursing)	70060100	922
Health trainers	70060150	923
Housekeepers (except private)	70080550	950

See footnotes at end of appendix.

Appendix 6--OES-census-based occupations used in project with corresponding 1970 OES-census matrix codes and census-of-population codes--Continued

Occupation	1970-census matrix code	OES-census-of-population code
Inspectors (except construction, public administration)	20040200	215
Inspectors, nec	50140550	452
Insurance agents, brokers, and underwriters	30000250	265
Jewelers and watchmakers	50140600	453
Librarians	10240550	32
Life, physical scientists, nec	10040400	54
Managers, superintendents, buildings	20060100	216
Meat cutters, butchers (except manufacturing)	61080750	631
Milliners	61080850	636
Miscellaneous clerical workers, nec	40061700	394
Nurse aides, orderlies	70060250	925
Officials, administrators, public	20040250	222
Officials of lodges, unions	20060250	223
Office managers, nec	20060150	220
Other health technologists, technicians (dietetic technicians)	10120300	85
Other managers, administrators	20060400	245
Other social scientists	10180300	96
Other technicians (except health)	10140350	173
Other textile operatives	61040250	674
Painters and sculptors	10220400	190
Personnel labor relations specialists	10240650	56
Photographers	10220450	191
Preschool, kindergarten teachers	10201050	143
Produce graders, packers (except factory, farm)	61060250	625
Psychologists	10180150	93
Public relations writers	10220500	192
Purchasing agents, buyers, nec	20020250	225
Radio, television announcers	10220550	193
Real estate agents, brokers	30000350	270
Recreation workers	10240750	101
Research workers, nec	10240700	195
Restaurant, cafeteria, bar managers	20060350	230
Sales and sales workers, nec	30000450	280
Sales managers (except retail trade)	20020350	233
Sales managers, retail trade	20020300	231
Secondary school teachers (vocational and nonvocational)	10201150	144
Sewers and stitchers	61081300	663

See footnotes at end of appendix.

Appendix 6--OES-census-based occupations used in project with corresponding 1970 OES-census matrix codes and census-of-population codes--Continued

Occupation	1970-census matrix code	OES-census-of-population code
Social workers	10240800	100
Sociologists	10180200	94
Statisticians	10060150	36
Tailors	50141100	551
Teachers, nec (except college and university)	10201500	145
Therapists (arts or recreation)	10100450	76
Upholsterers	50141150	563
Urban and regional planners	10180250	95
Vocational education counselors	10240850	174
Weavers	61040200	673
Welfare service aides	70080750	954
Writers, artists, entertainers, nec	10220600	194

1/ nec = Not elsewhere classified.
2/ Data based on USDA-SEA funded study by Clemson University.
3/ Data based on SEA Cooperative Research Services personnel file.

Appendix 7--OES-census-based industries used in project with corresponding OES-census matrix codes

OES-census matrix code	Industry
100110	Agricultural production
100130	Agricultural services, except horticultural
301500	General building contractors
301700	Special trade contractors
412500	Furniture and fixtures
413260	Pottery and related products
413420	Cutlery, hand tools, and other hardware
413480	Miscellaneous fabricated metal products
413590	Machinery, except electrical, nec[1/]
413630	Household applicances
413690	Electrical machinery, equipment, and supplies, nec
413900	Miscellaneous manufacturing industries
422010	Meat products
422020	Dairy products
422030	Canning and preserving fruits, vegetables, and seafood
422040	Grain-mill products
422050	Bakery products
422070	Confectionery and related products
422080	Beverage industries
422090	Miscellaneous food preparation and kindred products
422250	Knitting mills
422260	Dyeing and finishing textiles, except wool and knit goods
422270	Floor coverings, except hard surface
422280	Yarn, thread, and fabric mills
422290	Miscellaneous textile mill products
422310	Apparel and accessories
422390	Miscellaneous fabricated textile products
422660	Miscellaneous paper and pulp products
422710	Newspaper publishing and printing
422720	Printing, publishing, and allied industries, except newspapers
422810	Industrial chemicals
422820	Plastics, synthetics and resins, except fibers
422830	Synthetic fibers
422840	Drugs and medicines
422850	Soaps and cosmetics
422860	Paints, varnishes, and related products
422870	Agricultural chemicals
422890	Miscellaneous chemicals
423070	Miscellaneous plastic products
423110	Tanned, curried, and finished leather
423140	Footwear, except rubber
423180	Leather products, except footwear
524820	Telegraph, miscellaneous communications service

[1/] nec = Not elsewhere classified.

Appendix 7--OES-census-based industries used in project with corresponding OES-census matrix codes--Continued

OES-census matrix code	Industry
524830	Radio broadcasting, TV
524910	Electric light and power
524920	Electric-gas utilities
524930	Gas and steam supply systems
524940	Water supply
615020	Drugs, chemicals, allied products
615030	Dry goods and apparel
615040	Food and related products
615050	Food products--raw materials
615060	Electrical goods
615070	Hardware, plumbing
615080	Machinery equipment supplies
615930	Scrap and waste material
615950	Alcoholic beverages
615960	Paper and its products
615980	Lumber and construction materials
615990	Wholesale, nec
625210	Lumber, building material
625250	Hardware and farm equipment
625310	Department, mail order
625330	Limited price stores
625340	Vending machine operators
625350	Direct selling
625380	Miscellaneous merchandise stores
625410	Grocery stores
625450	Dairy product stores
625460	Retail bakeries
625490	Food stores, nec
625530	Tire, battery, accessory
625590	Miscellaneous vehicle dealers
625610	Apparel, accessories stores
625660	Shoe stores
625710	Home furnishing stores
625720	Appliance, TV, radio stores
625800	Eating and drinking places
625930	Farm, garden supply stores
625940	Jewelry stores
625960	Retail florists
625970	Miscellaneous retail trade stores
706010	Banking
706020	Credit agencies
706070	Stock brokers, investment
706300	Insurance
706500	Real estate, RE law insurance
807010	Hotels and motels
807040	Lodging places, except hotels
807210	Laundry, cleaning
807260	Dressmaking shops
807290	Other personal services

Appendix 7--OES-census-based industries used in project with corresponding OES-census matrix codes--Continued

OES-census matrix code	Industry
807310	Advertising
807390	Other miscellaneous service
807530	Auto services, except repair
807630	Other repair services
807800	Motion pictures, theater
808010	Offices of physicians
808060	Hospitals
808070	Convalescent institutions
808080	Health practitioners, nec[1/]
808100	Legal services
808210	Elementary, secondary
808220	Colleges and universities
808230	Libraries
808240	Educational services, nec
808300	Museums, art galleries, zoos
808660	Religious organizations
808670	Welfare services
808680	Residential welfare
808690	Nonprofit membership
808910	Engineering and architectural services
808980	Accounting, auditing
808990	Miscellaneous professional service
909190	Federal public administration
909200	State public administration
909300	Local public administration

[1/] nec = Not elsewhere classified.

Appendix 8--Example of OES-census Industry-Occupation Matrix

OES-census industry	OES-census occupation	Adult education workers	Advertising agents, sales workers	Archivists and curators	Bakers	Biological scientists	Buyers, wholesale, retail	Checkers, examiners, and inspectors; wholesale	Child care workers, (except private)	Cooks (except private)	Designers (for example, costume designers)	Dietitians	Dressmakers (except factory)	Editors and reporters
Furniture and fixtures														
Pottery and related products														
Household appliances														
Meat products														
Dairy products														
Grain mill products														
Beverage industries														
Yarn, thread and fabric mills														
Dyeing and finishing textiles, except wool and knit goods														
Apparel and accessories														
Electric light and power														
Dress making shops														
Hospitals														
Health practitioners														
Convalescent institutions														

Appendix 9-1--Transferable associate degrees: Estimated percent distributions of graduates of educational clusters to occupational clusters

Occupational Cluster	Educational Cluster										
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing
Administrators and Managers	--	--	--	--	5	--	--	--	--	--	5
Design, Manufacturing and Processing Specialists	--	10	--	--	65	--	--	--	--	--	5
Marketing, Merchandising and Sales Personnel	--	65	--	--	5	--	--	--	--	--	65
Media Specialists	--	--	--	--	--	--	75	--	--	--	--
Scientific and Professional Specialists	--	--	--	--	--	--	--	--	--	--	--
Service Specialists	--	--	75	--	--	--	--	--	--	--	--
Educators	--	--	--	--	--	--	--	--	--	--	--
Other	--	25	25	--	25	--	25	--	--	--	25
Return to native country Continue education Elect not to enter labor force Take job unrelated to education											
TOTAL	--	100	100	--	100	--	100	--	--	--	100

Appendix 9-2--Nontransferable associate degrees: Estimated percent distributions of graduates of educational clusters to occupational clusters

	Educational Cluster										
Occupational Cluster	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing
Administrators and Managers	--	--	--	--	5	--	--	--	--	--	5
Design, Manufacturing and Processing Specialists	--	10	--	--	80	--	--	--	--	--	5
Marketing, Merchandising and Sales Personnel	--	80	--	--	5	--	--	--	--	--	80
Media Specialists	--	--	--	--	--	--	90	--	--	--	--
Scientific and Professional Specialists	--	--	--	--	--	--	--	--	--	--	--
Service Specialists	--	--	90	--	--	--	--	--	--	--	--
Educators	--	--	--	--	--	--	--	--	--	--	--
Other	--	10	10	--	10	--	10	--	--	--	10
Return to native county Continue education Elect not to enter labor force Take job unrelated to education											
TOTAL	--	100	100	--	100	--	100	--	--	--	100

Appendix 9-3--Baccalaureate degrees: Estimated percent distributions of graduates of educational clusters to occupational clusters

Occupational Cluster	Educational Cluster										
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing
Administrators and Managers	--	5	5	2	40	--	--	3	5	5	5
Design, Manufacturing and Processing Specialists	10	10	--	--	15	5	--	--	20	--	10
Marketing, Merchandising and Sales Personnel	50	70	5	24	5	5	38	8	25	5	60
Media Specialists	--	8	--	5	5	2	47	3	10	--	2
Scientific and Professional Specialists	--	2	--	--	12	45	--	--	5	--	--
Service Specialists	10	--	62	36	10	25	5	2	10	25	--
Educators	10	5	20	10	5	3	5	62	10	45	5
Other	20	--	8	23	8	15	5	22	10	20	18
Return to native country											
Continue education											
Elect not to enter labor force											
Take job unrelated to education											
TOTAL	100	100	100	100	100	100	100	100	100	100	100

Appendix 9-4--Master's degrees: Estimated percent distributions of graduates of educational clusters to occupational clusters

Occupational Cluster	Educational Cluster										
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing
Administrators and Managers	5	10	5	5	10	5	1	5	5	10	10
Design, Manufacturing and Processing Specialists	--	20	--	--	10	18	--	--	20	--	30
Marketing, Merchandising and Sales Personnel	5	40	5	20	30	5	35	5	25	5	30
Media Specialists	5	10	--	5	5	2	48	5	5	--	5
Scientific and Professional Specialists	10	--	--	4	5	25	--	--	5	--	5
Service Specialists	20	--	62	25	5	5	5	10	10	22	--
Educators	53	10	20	30	30	10	5	65	15	50	13
Other	2	10	8	11	5	30	6	10	10	13	7
Return to native country											
Continue education											
Elect not to enter labor force											
Take job unrelated to education											
TOTAL	100	100	100	100	100	100	100	100	100	100	100

Appendix 9-5--Doctoral degrees: Estimated percent distributions of graduates of educational clusters to occupational clusters

Occupational Cluster	Educational Cluster										
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing
Administrators and Managers	--	75	5	5	50	5	5	5	3	9	5
Design, Manufacturing and Processing Specialists	--	--	--	--	2	3	--	--	--	--	10
Marketing, Merchandising and Sales Personnel	--	25	--	--	5	2	--	3	5	--	5
Media Specialists	--	--	--	--	5	5	45	5	--	5	--
Scientific and Professional Specialists	--	--	--	20	5	26	--	3	--	--	5
Service Specialists	--	--	31	26	--	10	--	5	2	25	--
Educators	--	--	62	41	30	41	50	75	90	55	71
Other	--	--	2	8	3	8	--	4	--	6	4
Return to native country											
Continue education											
Elect not to enter labor force											
Take job unrelated to education											
TOTAL	100	100	100	100	100	100	100	100	100	100	100

Appendix 10-1--Transferable associate degrees: 1977/78 supply of home economics graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	--	--	--	--	--	--	--	--	--	--	--	--
Design, Manufacturing and Processing Specialists	--	--	--	--	--	--	--	--	--	--	--	--
Marketing, Merchandising and Sales Personnel	--	--	--	--	--	--	--	--	--	--	--	--
Media Specialists	--	--	--	--	--	--	--	--	--	--	--	--
Scientific and Professional Specialists	--	--	--	--	--	--	--	--	--	--	--	--
Service Specialists	--	--	367	--	--	--	--	--	--	--	--	367
Educators	--	--	--	--	--	--	--	--	--	--	--	--
Other	--	--	123	--	--	--	--	--	--	--	--	123
Return to native country												
Continue education												
Elect not to enter labor force												
Take job unrelated to education												
Total	--	--	490	--	--	--	--	--	--	--	--	490

-- = No associate degree specializations assigned to occupational cluster.

[1/] Based on 1977/78 HEGIS data.

Appendix 10-2--Nontransferable associate degrees: 1977/78 supply of home economics graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	--	--	--	--	--	--	--	--	--	--	--	--
Design, Manufacturing and Processing Specialists	--	--	--	--	--	--	--	--	--	--	--	--
Marketing, Merchandising and Sales Personnel	--	--	--	--	--	--	--	--	--	--	--	--
Media Specialists	--	--	--	--	--	--	--	--	--	--	--	--
Scientific and Professional Specialists	--	--	--	--	--	--	--	--	--	--	--	--
Service Specialists	--	--	954	--	--	--	--	--	--	--	--	954
Educators	--	--	--	--	--	--	--	--	--	--	--	--
Other	--	--	106	--	--	--	--	--	--	--	--	106
Return to native country												
Continue education												
Elect not to enter labor force												
Take job unrelated to education												
Total	--	--	1,060	--	--	--	--	--	--	--	--	1,060

-- = No associate degree specializations assigned to occupational cluster.

[1/] Based on 1977/78 HEGIS data.

Appendix 10-3--Associate degrees[1/]: 1977/78 supply of home economics graduates aggregated by educational cluster and distributed by occupational cluster[2/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	--	--	--	--	--	--	--	--	--	--	--	--
Design, Manufacturing and Processing Specialists	--	--	--	--	--	--	--	--	--	--	--	--
Marketing, Merchandising and Sales Personnel	--	--	--	--	--	--	--	--	--	--	--	--
Media Specialists	--	--	--	--	--	--	--	--	--	--	--	--
Scientific and Professional Specialists	--	--	--	--	--	--	--	--	--	--	--	--
Service Specialists	--	--	1,321	--	--	--	--	--	--	--	--	1,321
Educators	--	--	--	--	--	--	--	--	--	--	--	--
Other	--	--	229	--	--	--	--	--	--	--	--	229
Return to native country												
Continue education												
Elect not to enter labor force												
Take job unrelated to education												
Total	--	--	1,550	--	--	--	--	--	--	--	--	1,550

[1/] Total transferable and nontransferable associate degrees.

-- = No associate-degree specializations assigned to occupational cluster.

[2/] Based on 1977/78 HEGIS data.

Appendix 10-4--Baccalaureate degrees: 1977/78 supply of home economics graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education[2]	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	--	3	--	23	265	--	--	130	62	239	223	945
Design, Manufacturing and Processing Specialists	63	5	--	--	99	232	--	--	250	--	446	1,095
Marketing, Merchandising and Sales Personnel	316	38	--	276	33	232	10	348	312	239	2,674	4,478
Media Specialists	--	4	--	57	33	93	13	130	125	--	89	544
Scientific and Professional Specialists	--	1	--	--	80	2,091	--	--	62	--	--	2,234
Service Specialists	63	--	--	414	66	1,162	1	87	125	1,195	--	3,113
Educators	63	--	--	115	33	139	1	2,695	125	2,151	223	5,545
Other	127	3	--	264	53	697	1	956	125	956	802	3,984
Return to native country												
Continue education												
Elect not to enter labor force												
Take job unrelated to education												
Total	632	54	--	1,149	662	4,646	26	4,346	1,186	4,780	4,457	21,938

-- = No baccalaureate degree specializations assigned to occupational cluster.

[1/] Based on 1977/78 HEGIS data.

[2/] Based on 1977/78 data supplied by Office of Consumer and Home Economics Education, U.S. Department of Education

Appendix 10-5--Master's degrees: 1977/78 supply of home economics graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education[2/]	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administratora and Managers	6	1	--	8	8	52	0	25	3	97	19	219
Design, Manufacturing and Processing Specialists	--	1	--	--	8	186	--	--	12	--	57	264
Marketing, Merchandising and Sales Personnel	6	3	--	31	23	52	0	25	15	49	57	261
Media Specialists	6	1	--	8	4	21	0	25	3	--	9	77
Scientific and Professional Specialists	11	--	--	6	4	258	--	--	3	--	10	292
Service Specialists	23	--	--	39	4	52	0	51	6	214	--	389
Educators	60	1	--	47	23	103	0	331	9	486	25	1,085
Other	2	1	--	17	4	310	0	51	6	126	13	530
Return to native country												
Continue education												
Elect not to enter labor force												
Take job unrelated to education												
Total	114	8	--	156	78	1,034	0	508	57	972	190	3,117

-- = No master's degree specializations assigned to occupational cluster.

0 = no graduates reported.

[1/] Based on 1977/78 HEGIS data.

[2/] Based on 1977/78 AAHE data.

Appendix 10-6--Doctoral degrees: 1977/78 supply of home economics graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education[2]	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	1	--	--	1	0	3	0	3	0	10	1	19
Design, Manufacturing and Processing Specialists	--	--	--	--	0	2	--	--	--	--	2	4
Marketing, Marchandising and Sales Personnel	--	0	--	--	0	1	--	2	0	--	1	4
Media Specialists	--	--	--	--	0	3	0	3	--	5	--	11
Scientific and Professional Specialists	--	--	--	4	0	13	--	2	--	--	1	20
Service Specialists	--	--	--	5	--	5	--	3	0	27	--	40
Educators	--	0	--	8	0	21	0	42	0	59	13	143
Other Return to native country Continue education Elect not to enter labor force Take job unrelated to education	--	--	--	2	0	4	--	2	--	6	1	15
Total	1	0	--	20	0	52	0	57	0	107	19	256

-- = No doctoral degree specializations assigned to occupational cluster.

0 = no graduates reported

[1/] Based on 1977/78 HEGIS data.

[2/] Based on 1977/78 AAHE data.

Appendix 10-7--Total degrees: 1977/78 supply of home economics graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education[2]	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	7	1	--	32	273	55	0	158	65	346	243	1,180
Design, Manufacturing and Processing Specialists	63	6	--	--	107	420	--	--	262	--	505	1,363
Marketing, Merchandising and Sales Personnel	322	41	--	307	56	285	10	375	327	288	2,732	4,743
Media Specialists	6	5	--	65	37	117	13	158	128	5	98	632
Scientific and Professional Specialists	11	1	--	10	84	2,362	--	2	65	--	11	2,546
Service Specialists	86	--	1,321	458	70	1,219	1	141	131	1,436	--	4,863
Educators	123	4	--	170	56	263	1	3,068	134	2,696	261	6,776
Other Return to native country Continue education Elect not to enter labor force Take job unrelated to education	129	4	229	283	57	1,011	1	1,009	131	1,088	816	4,758
Total	747	62	1,550	1,325	740	5,732	26	4,911	1,243	5,859	4,666	26,861

-- = No degree specializations assigned to occupational cluster.

0 = No graduates reported.

[1/] Based on 1977/78 HEGIS data.

[2/] Based on 1977/78 AAHE data and 1977/78 data supplied by the Office of Consumer and Home Economics Education, DOED.

Appendix 11-1--Transferable associate degrees: 1977/78 supply of home economics-related graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	--	--	--	--	88	--	--	--	--	--	15	103
Design, Manufacturing and Processing Specialists	--	29	--	--	1,150	--	--	--	--	--	15	1,194
Marketing, Merchandising and Sales Personnel	--	191	--	--	88	--	--	--	--	--	191	470
Media Specialists	--	--	--	--	--	--	6	--	--	--	--	6
Scientific and Professional Specialists	--	--	--	--	--	--	--	--	--	--	--	--
Service Specialists	--	--	--	--	--	--	--	--	--	--	--	--
Educators	--	--	--	--	--	--	--	--	--	--	--	--
Other Return to native country Continue education Elect not to enter labor force Take job unrelated to education	--	74	--	--	444	--	1	--	--	--	74	593
Total	--	294	--	--	1,770	--	7	--	--	--	295	2,366

-- = No associate degree specializations assigned to occupational cluster.

[1/] Based on 1977/78 HEGIS data.

Appendix 11-2--Nontransferable associate degrees: 1977/78 supply of home economics-related graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	--	--	--	--	36	--	--	--	--	--	13	49
Design, Manufacturing and Processing Specialists	--	26	--	--	574	--	--	--	--	--	13	613
Marketing, Merchandising and Sales Personnel	--	206	--	--	36	--	--	--	--	--	206	448
Media Specialists	--	--	--	--	--	--	8	--	--	--	--	8
Scientific and Professional Specialists	--	--	--	--	--	--	--	--	--	--	--	--
Service Specialists	--	--	--	--	--	--	--	--	--	--	--	--
Educators	--	--	--	--	--	--	--	--	--	--	--	--
Other Return to native country Continue education Elect not to enter labor force Take job unrelated to education	--	26	--	--	72	--	2	--	--	--	26	126
Total	--	258	--	--	718	--	10	--	--	--	258	1,244

-- = No associate degree specializations assigned to occupational cluster.

[1/] Based on 1977/78 HEGIS data.

Appendix 11-3--Associate[1] degrees: 1977/78 supply of home economics-related graduates aggregated by educational cluster and distributed by occupational cluster[2]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	--	--	--	--	124	--	--	--	--	--	28	152
Design, Manufacturing and Processing Specialists	--	55	--	--	1,724	--	--	--	--	--	28	1,807
Marketing, Merchandising and Sales Personnel	--	397	--	--	124	--	--	--	--	--	397	918
Media Specialists	--	--	--	--	--	--	14	--	--	--	--	14
Scientific and Professional Specialists	--	--	--	--	--	--	--	--	--	--	--	--
Service Specialists	--	--	--	--	--	--	--	--	--	--	--	--
Educators	--	--	--	--	--	--	--	--	--	--	--	--
Other	--	100	--	--	516	--	3	--	--	--	100	719
Return to native country												
Continue education												
Elect not to enter labor force												
Take job unrelated to education												
Total	--	552	--	--	2,488	--	17	--	--	--	553	3,610

[1] Total transferable and nontransferable associate degrees.

[2] Based on 1977/78 HEGIS data.

-- = No associate degree specialization assigned to occupational cluster.

Appendix 11-4--Baccalaureate degrees: 1977/78 graduates with home economics-related degrees aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	--	129	2	25	1,384	--	--	0	106	188	148	1,982
Design, Manufacturing and Processing Specialists	--	258	--	--	519	103	--	--	424	--	296	1,600
Marketing, Merchandising and Sales Personnel	--	1,808	2	301	173	103	56	1	530	188	1,778	4,940
Media Specialists	--	207	--	63	173	42	70	0	212	--	59	826
Scientific and Professional Specialists	--	52	--	--	415	926	--	--	106	--	--	1,499
Service Specialists	--	--	23	452	346	514	7	0	212	938	--	2,492
Educators	--	--	7	125	173	62	7	7	212	1,688	148	2,429
Other Return to native country Continue education Elect not to enter labor force Take job unrelated to education	--	129	3	289	277	309	7	3	212	3,752	533	2,512
Total	--	2,583	37	1,255	3,460	2,059	147	11	2,014	3,752	2,962	18,280

-- = No baccalaureate degree specializations assigned to occupational cluster.

0 = No graduates reported.

[1/] Based on 1977/78 HEGIS data.

Appendix 11-5--Master's degrees: 1977/78 supply of home economics-related graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	--	288	4	8	17	37	0	1	16	88	2	461
Design, Manufacturing and Processing Specialists	--	576	--	--	17	132	--	--	64	--	6	795
Marketing, Merchandising and Sales Personnel	--	1,153	4	33	52	37	6	1	80	44	6	1,416
Media Specialists	--	288	--	8	9	15	9	1	16	--	1	347
Scientific and Professional Specialists	--	--	--	7	9	184	--	--	16	--	1	217
Service Specialists	--	--	51	42	9	37	1	2	32	193	--	367
Educators	--	288	16	50	52	73	1	15	48	438	3	984
Other	--	288	7	18	9	220	1	2	32	114	1	692
Return to native country												
Continue education												
Elect not to enter labor force												
Take job unrelated to education												
Total	--	2,881	82	166	174	735	18	22	304	877	20	5,279

-- = No master's degree specializations assigned to occupational cluster.

0 = No graduates reported.

[1/] Based on 1977/78 HEGIS data.

Appendix 11-6--Doctoral degrees: 1977/78 supply of home economics-related graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	--	41	0	1	2	11	0	1	0	7	0	63
Design, Manufacturing and Processing Specialists	--	--	--	--	0	7	--	--	--	--	0	7
Marketing, Merchandising and Sales Personnel	--	13	--	--	0	4	--	1	1	--	0	19
Media Specialists	--	--	--	--	0	11	0	1	--	4	--	16
Scientific and Professional Specialists	--	--	--	3	0	58	--	1	--	--	0	62
Service Specialists	--	--	3	4	--	22	--	1	0	19	--	49
Educators	--	--	6	6	1	92	0	18	10	41	1	175
Other Return to native country Continue education Elect not to enter labor force Take job unrelated to education	--	--	0	1	0	18	--	1	--	5	0	25
Total	--	54	9	15	3	223	0	24	11	76	1	416

-- = No doctoral degree specializations assigned to occupational cluster.

0 = No graduates reported.

[1/] Based on 1977/78 HEGIS data.

Appendix 11-7--Total Degrees: 1977/78 supply of home economics-related graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	--	458	6	34	1,527	48	0	2	122	283	178	2,658
Design, Manufacturing and Processing Specialists	--	889	--	--	2,260	242	--	--	488	--	330	4,209
Marketing, Merchandising and Sales Personnel	--	3,371	6	334	349	144	62	3	611	232	2,181	7,293
Media Specialists	--	495	--	71	182	68	93	2	228	4	60	1,203
Scientific and Professional Specialists	--	52	--	10	424	1,168	--	1	122	--	1	1,778
Service Specialists	--	--	77	498	355	573	8	3	244	1,150	--	2,908
Educators	--	288	29	181	226	227	8	40	270	2,167	152	3,588
Other Return to native country Continue education Elect not to enter labor force Take job unrelated to education	--	231	10	308	802	547	11	6	244	869	634	3,662
Total	--	5,784	128	1,436	6,125	3,017	182	57	2,329	4,705	3,536	27,299

-- = No degree specializations assigned to occupational cluster.

0 = No graduates reported.

[1/] Based on 1977/78 HEGIS data.

Appendix 12-1--Transferable associate degrees: Summary of 1977/78 supply of home economics/home economics-related graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	--	--	--	--	88	--	--	--	--	--	15	103
Design, Manufacturing and Processing Specialists	--	29	--	--	1,150	--	--	--	--	--	15	1,194
Marketing, Merchandising and Sales Personnel	--	191	--	--	88	--	--	--	--	--	191	470
Media Specialists	--	--	--	--	--	--	6	--	--	--	--	6
Scientific and Professional Specialists	--	--	--	--	--	--	--	--	--	--	--	--
Service Specialists	--	--	367	--	--	--	--	--	--	--	--	367
Educators	--	--	--	--	--	--	--	--	--	--	--	--
Other Return to native country Continue education Elect not to enter labor force Take job unrelated to education	--	74	122	--	442	--	2	--	--	--	74	714
Total	--	294	189	--	1,768	--	8	--	--	--	295	2,854

-- = No associate degree specializations assigned to occupational cluster.

[1/] Based on 1977/78 HEGIS data.

Appendix 12-2--Nontransferable associate degrees: Summary of 1977/78 supply of home economics/home economics-related graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	--	--	--	--	36	--	--	--	--	--	13	49
Design, Manufacturing and Processing Specialists	--	26	--	--	574	--	--	--	--	--	13	613
Marketing, Merchandising and Sales Personnel	--	206	--	--	36	--	--	--	--	--	206	448
Medical Specialists	--	--	--	--	--	--	8	--	--	--	--	8
Scientific and Professional Specialists	--	--	--	--	--	--	--	--	--	--	--	--
Service Specialists	--	954	--	--	--	--	--	--	--	--	--	954
Educators	--	--	--	--	--	--	--	--	--	--	--	--
Other Return to native country Continue education Elect not to enter labor force Take job unrelated to education	--	26	106	--	72	--	1	--	--	--	26	231
Total	--	258	1,060	--	718	--	9	--	--	--	258	2,303

-- = No associate degree specializations assigned to occupational cluster.

[1/] Based on 1977/78 HEGIS data.

Appendix 12-3--Associate[1] degrees: Summary of 1977/78 supply of home economics/home economics-related graduates aggregated by educational cluster and distributed by occupational cluster[2]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	--	--	--	--	124	--	--	--	--	--	28	152
Design, Manufacturing and Processing Specialists	--	55	--	--	1,724	--	--	--	--	--	28	1,807
Marketing, Merchandising and Sales Personnel	--	397	--	--	124	--	--	--	--	--	397	918
Media Specialists	--	--	--	--	--	--	14	--	--	--	--	14
Scientific and Professional Specialists	--	--	1,321	--	--	--	--	--	--	--	--	--
Service Specialists	--	--	--	--	--	--	--	--	--	--	--	1,321
Educators	--	--	--	--	--	--	--	--	--	--	--	--
Other	--	100	228	--	514	--	3	--	--	--	100	945
Return to native country												
Continue education												
Elect not to enter labor force												
Take job unrelated to education												
Total	--	552	1,549	--	2,486	--	17	--	--	--	553	5,157

-- = No associate degree specializations assigned to occupational cluster.

[1] Total transferable and nontransferable associate degrees.

[2] Based on 1977/78 HEGIS data.

Appendix 12-4--Baccalaureate degrees: Summary of 1977/78 supply of home economics/home economics-related graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	--	132	2	48	1,649	--	--	130	168	427	371	2,927
Design, Manufacturing and Processing Specialists	63	263	--	--	618	335	--	--	674	--	742	2,695
Marketing, Merchandising and Sales Personnel	316	1,846	2	577	206	335	66	349	842	427	4,452	9,418
Media Specialists	--	211	--	120	206	135	83	130	337	--	148	1,370
Scientific and Professional Specialists	--	53	--	--	495	3,017	--	--	168	--	--	3,733
Service Specialists	63	--	23	866	412	1,676	8	87	337	2,133	--	5,605
Educators	63	--	7	240	206	201	8	2,702	337	3,839	371	7,974
Other Return to native country Continue education Elect not to enter labor force Take job unrelated to education	127	132	3	553	330	1,006	8	959	337	1,706	1,335	6,496
Total	632	2,637	40	2,404	4,122	6,705	173	4,357	3,200	8,832	7,419	40,219

-- = No baccalaureate degree specializations assigned to occupational cluster.

[1/] Based on 1977/78 HEGIS data.

Appendix 12-5--Master's degrees: Summary of 1977/78 supply of home economics/home economics-related graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	6	289	4	16	25	89	0	26	19	185	21	680
Design, Manufacturing and Processing Specialists	--	577	--	--	25	318	--	--	76	--	63	1,059
Marketing, Merchandising and Sales Personnel	6	1,156	4	64	75	89	6	26	95	93	63	1,677
Media Specialists	6	289	--	16	13	86	9	26	19	--	10	424
Scientific and Professional Specialists	11	--	--	13	13	442	--	--	19	--	11	509
Service Specialists	23	--	51	81	13	89	1	53	38	407	--	756
Educators	60	289	16	97	75	176	1	346	57	924	28	2,069
Other Return to native country Continue education Elect not to enter labor force Take job unrelated to education	2	289	7	35	13	530	1	53	38	240	14	1,222
Total	114	2,889	82	322	252	1,769	18	530	361	1,849	210	8,396

-- = No master's degree specializations assigned to occupational cluster.

0 = No graduates reported.

[1/] Based on 1977/78 HEGIS data.

Appendix 12-6--Doctoral degrees: Summary of 1977/78 supply of home economics/home economics-related graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	1	41	0	2	2	14	0	4	0	17	1	82
Design, Manufacturing and Processing Specialists	--	--	--	--	0	9	--	--	0	--	--	11
Marketing, Merchandising and Sales Personnel	--	13	--	--	0	5	--	3	1	--	1	23
Media Specialists	--	--	--	--	--	14	0	4	--	9	--	27
Scientific and Professional Specialists	--	--	--	7	0	71	--	3	--	--	1	82
Service Specialists	--	--	3	9	--	27	--	4	0	46	--	79
Educators	--	0	6	14	1	113	0	60	10	100	14	318
Other	--	--	0	3	0	22	--	3	--	11	1	40
Return to native country												
Continue education												
Elect not to enter labor force												
Take job unrelated to education												
Total	1	54	9	35	1	275	0	77	11	183	20	672

-- = No doctoral degree specializations assigned to occupational cluster.

0 = No graduates reported.

[1/] Based on 1977/78 HEGIS data.

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	7	459	6	66	1,800	103	0	160	187	629	421	3,838
Design, Manufacturing and Processing Specialists	63	895	--	--	2,367	662	--	--	750	--	835	5,572
Marketing, Merchandising and Sales Personnel	322	3,412	6	641	405	429	72	378	938	520	4,913	12,036
Media Specialists	6	500	--	136	219	185	106	160	356	9	158	1,835
Scientific and Professional Specialists	11	53	--	20	508	3,530	--	3	187	--	12	4,324
Service Specialists	86	--	1,398	956	425	1,792	9	144	375	2,586	--	7,771
Educators	123	292	29	351	282	490	9	3,108	404	4,863	413	10,364
Other	129	235	239	591	859	1,558	12	1,015	375	1,957	1,450	8,420
Return to native country												
Continue education												
Elect not to enter labor force												
Take job unrelated to education												
Total	749	5,846	1,678	2,761	6,865	8,749	208	4,968	3,572	10,564	8,202	54,160

-- = No degree specializations assigned to occupational cluster.

0 = No graduates reported.

1/ Based on 1977/78 HEGIS data.

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Appendix 13-1--Baccalaureate degrees: 1989/90 projected supply of home economics graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	--	3	--	23	271	--	--	130	64	244	224	959
Design, Manufacturing and Processing Specialists	65	5	--	--	102	237	--	--	258	--	449	1,116
Marketing, Merchandising and Sales Personnel	323	38	--	282	34	237	11	348	319	244	2,694	4,530
Media Specialists	--	4	--	59	34	95	13	130	128	--	90	553
Scientific and Professional Specialists	--	1	--	--	81	2,136	--	--	64	--	--	2,282
Service Specialists	65	--	--	423	68	1,187	1	87	128	1,221	--	3,180
Educators	65	--	--	117	34	142	1	2,695	128	2,198	224	5,604
Other	129	3	--	270	54	712	1	956	128	977	808	4,038
Return to native country												
Continue education												
Elect not to enter labor force												
Take job unrelated to education												
Total	647	54	--	1,174	678	4,746	27	4,346	1,217	4,884	4,489	22,262

-- = No baccalaureate degree specializations assigned to occupational cluster.

[1/] Based on NCES projections methodology.

Appendix 13-2--Master's degrees: 1989/90 projected supply of home economics graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	8	1	--	10	10	69	0	25	4	130	25	282
Design, Manufacturing and Processing Specialists	--	2	--	--	10	247	--	--	16	--	76	351
Marketing, Merchandising and Sales Personnel	8	4	--	42	31	69	0	25	20	65	76	340
Media Specialists	8	1	--	10	5	27	0	25	4	--	13	93
Scientific and Professional Specialists	15	--	--	8	5	344	--	--	4	--	13	389
Service Specialists	30	--	--	52	5	69	0	51	8	285	--	500
Educators	81	1	--	62	31	137	0	331	12	649	33	1,337
Other Return to native country Continue education Elect not to enter labor force Take job unrelated to education	3	1	--	23	5	412	0	51	8	169	18	690
Total	153	10	--	207	102	1,374	0	508	72	1,298	254	3,982

-- = No master's degree specializations assigned to occupational cluster.

0 = No graduates anticipated.

[1/] Based on NCES projections methodology.

Appendix 13-3--Doctoral degrees: 1989/90 projected supply of home economics graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	2	--	--	2	0	4	0	3	0	17	2	30
Design, Manufacturing and Processing Specialists	--	--	--	--	0	3	--	--	--	--	3	6
Marketing, Merchandising and Sales Personnel	--	0	--	--	0	2	--	2	0	--	2	4
Media Specialists	--	--	--	--	0	4	0	3	--	9	--	16
Scientific and Professional Specialists	--	--	--	7	0	23	--	2	--	--	2	34
Service Specialists	--	--	--	9	--	9	--	3	0	46	--	67
Educators	--	0	--	14	0	36	0	42	0	101	22	215
Other	--	--	--	3	0	7	--	2	--	11	1	24
Return to native country												
Continue education												
Elect not to enter labor force												
Take job unrelated to education												
Total	2	0	--	35	0	88	0	57	0	184	32	398

-- = No doctoral degree specializations assigned to occupational cluster.

0 = No graduates anticipated.

[1/] Based on NCES projections methodology.

Appendix 13-4--Total degrees: 1989/90 projected supply of home economics graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	10	1	--	35	281	73	0	158	68	391	251	1,268
Design, Manufacturing and Processing Specialists	65	7	--	--	112	487	--	--	274	--	528	1,473
Marketing, Merchandising and Sales Personnel	331	42	--	324	65	308	11	375	339	309	2,772	4,876
Media Specialists	8	5	--	69	39	126	13	158	132	9	103	662
Scientific and Professional Specialists	15	1	--	15	86	2,503	--	2	68	--	15	2,705
Service Specialists	95	--	--	484	73	1,265	1	141	136	1,552	--	3,747
Educators	146	4	--	193	65	315	1	3,068	140	2,948	279	7,159
Other Return to native country Continue education Elect not to enter labor force Take job unrelated to education	132	4	--	296	59	1,131	1	1,009	136	1,157	827	4,752
Total	802	64	--	1,416	780	6,208	27	4,911	1,293	6,366	4,775	26,642

-- = No degree specializations assigned to occupational cluster.

0 = No graduates anticipated.

[1/] Based on NCES projections methodology.

Appendix 14-1--Baccalaureate degrees: 1989/90 projected supply of home economics-related graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	--	159	2	31	1,684	--	--	1	114	141	177	2,309
Design, Manufacturing and Processing Specialists	--	318	--	--	632	126	--	--	456	--	355	1,887
Marketing, Merchandising and Sales Personnel	--	2,229	2	371	211	126	73	1	569	141	2,130	5,853
Media Specialists	--	255	--	77	211	50	91	1	228	--	71	984
Scientific and Professional Specialists	--	64	--	--	505	1,133	--	--	114	--	--	1,816
Service Specialists	--	--	22	557	421	630	10	0	228	703	--	2,571
Educators	--	--	7	155	211	76	10	11	228	1,266	177	2,141
Other	--	159	3	356	337	378	10	4	228	563	639	2,677
Return to native country												
Continue education												
Elect not to enter labor force												
Take job unrelated to education												
Total	--	3,184	36	1,547	4,212	2,519	194	18	2,165	2,814	3,549	20,238

-- = No baccalaureate degree specializations assigned to occupational cluster.

0 = No graduates anticipated.

[1/] Based on NCES projections methodology.

Appendix 14-2--Master's degrees: 1989/90 projected supply of home economics-related graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	--	301	5	9	17	43	0	1	15	67	2	460
Design, Manufacturing and Processing Specialists	--	603	--	--	17	156	--	--	60	--	7	843
Marketing, Merchandising and Sales Personnel	--	1,205	5	35	52	43	7	1	73	34	7	1,462
Media Specialists	--	301	--	9	9	17	10	1	15	--	1	363
Scientific and Professional Specialists	--	--	--	7	9	217	--	--	15	--	1	249
Service Specialists	--	--	57	44	9	43	1	3	29	148	--	334
Educators	--	301	18	52	52	87	1	18	44	337	3	913
Other Return to native country Continue education Elect not to enter labor force Take job unrelated to education	--	301	7	19	9	260	1	3	29	88	2	719
Total	--	3,012	92	175	174	866	20	27	280	674	23	5,343

-- = No master's degree specializations assigned to occupational cluster.

0 = No graduates anticipated.

[1/] Based on NCES projections methodology.

Appendix 14-3--Doctoral degrees: 1989/90 projected supply of home economics-related graduate degrees aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	--	38	0	1	3	11	0	1	0	6	0	60
Design, Manufacturing and Processing Specialists	--	--	--	--	0	7	--	--	--	--	0	7
Marketing, Merchandising and Sales Personnel	--	12	--	--	0	4	--	1	1	--	0	18
Media Specialists	--	--	--	--	0	11	0	1	--	3	--	15
Scientific and Professional Specialists	--	--	--	3	0	58	--	1	--	--	0	62
Service Specialists	--	--	2	4	--	22	--	1	0	16	--	45
Educators	--	--	5	6	1	92	0	15	10	36	1	166
Other Return to native country Continue education Elect not to enter labor force Take job unrelated to education	--	--	0	1	0	18	--	1	--	4	0	24
Total	--	50	7	15	4	223	0	21	11	65	1	397

-- = No doctoral degree specializations assigned to occupational cluster.

0 = No graduates anticipated.

[1/] Based on NCES projections methodology.

Appendix 14-4--Total degrees: 1989/90 projected supply of home economics-related graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	--	498	7	41	1,704	54	0	3	129	214	179	2,829
Design, Manufacturing and Processing Specialists	--	921	--	--	649	289	--	--	516	--	362	2,737
Marketing, Merchandising and Sales Personnel	--	3,446	7	406	263	173	80	3	643	175	2,137	7,333
Media Specialists	--	556	--	86	220	78	101	3	243	3	72	1,362
Scientific and Professional Specialists	--	64	--	10	514	1,408	--	1	129	--	1	2,127
Service Specialists	--	--	81	605	430	695	11	4	257	867	--	2,950
Educators	--	301	30	213	264	255	11	44	282	1,639	181	3,220
Other Return to native country Continue education Elect not to enter labor force Take job unrelated to education	--	460	10	376	346	656	11	8	257	655	641	3,420
Total	--	6,246	135	1,737	4,390	3,608	214	66	2,456	3,553	3,579	25,978

-- = No degree specializations assigned to occupational cluster.

0 = No graduates anticipated.

[1/] Based on NCES projections methodology.

Appendix 15-1--Baccalaureate degrees: Summary of 1989/90 projected [illegible] of home economics/home economics-related graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	--	162	2	54	1,955	--	--	131	178	385	401	3,268
Design, Manufacturing and Processing Specialists	65	323	--	--	734	363	--	--	714	--	804	3,003
Marketing, Merchandising and Sales Personnel	323	2,267	2	653	245	363	84	349	888	385	4,824	10,383
Media Specialists	--	259	--	136	245	145	104	131	356	--	161	1,537
Scientific and Professional Specialists	--	65	--	--	586	3,269	--	--	178	--	--	4,098
Service Specialists	65	--	22	980	489	1,817	11	87	356	1,924	--	5,751
Educators	65	--	7	272	245	218	11	2,706	356	3,464	401	7,745
Other	129	162	3	626	391	1,090	11	960	356	1,540	1,447	6,715
Return to native country												
Continue education												
Elect not to enter labor force												
Take job unrelated to education												
Total	647	3,238	36	2,721	4,890	7,265	221	4,364	3,382	7,698	8,038	42,500

-- = No baccalaureate degree specializations assigned to occupational cluster.

0 = No graduates anticipated.

[1/] Based on NCES projections methodology.

Appendix 15-2--Master's degrees: Summary of 1989/90 projected supply of home economics/home economics-related graduates aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	8	3	5	19	27	112	0	26	19	197	27	443
Design, Manufacturing and Processing Specialists	--	6	--	--	27	403	--	--	76	--	83	595
Marketing, Merchandising and Sales Personnel	8	12	5	77	83	112	7	26	93	99	83	605
Media Specialists	8	3	--	19	14	49	10	26	19	--	14	157
Scientific and Professional Specialists	15	--	--	15	14	561	--	--	19	--	14	638
Service Specialists	30	--	57	96	14	112	1	54	37	433	--	834
Educators	81	3	18	114	83	224	1	349	56	986	36	1,951
Other	3	3	7	41	14	672	1	54	37	257	20	1,109
Return to native country												
Continue education												
Elect not to enter labor force												
Take job unrelated to education												
Total	153	30	92	381	276	2,240	20	535	356	1,972	277	6,332

-- = No master's degree specializations assigned to occupational cluster.

0 = No graduates anticipated.

1/ Based on NCES projections methodology.

Appendix 15-3--Doctoral degrees: Summary of 1989/90 projected supply of home economics/home economics-related graduates aggregated by educational cluster and distributed by occuational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	2	38	0	3	3	15	0	4	0	23	2	90
Design, Manufacturing and Processing Specialists	--	--	--	--	0	10	--	--	0	--	3	13
Marketing, Merchandising and Sales Personnel	--	12	--	--	0	6	--	3	1	--	8	30
Media Specialists	--	--	--	--	0	15	0	4	--	12	--	31
Scientific and Professional Specialists	--	--	--	10	0	81	--	3	--	--	2	96
Service Specialists	--	--	2	13	--	31	--	4	0	62	--	112
Educators	0	0	5	20	1	128	0	57	10	137	23	381
Other	--	--	0	4	0	25	--	3	--	15	1	48
Return to native country												
Continue education												
Elect not to enter labor force												
Take job unrelated to education												
Total	2	50	7	50	4	311	0	78	11	249	39	801

-- = No doctoral degree specializations assigned to occupational cluster.

0 = No graduates anticipated.

[1/] Based on NCES projections methodology.

Appendix 15-4--Total degrees: 1989/90 projected supply of home economics/home economics-related graduate degrees aggregated by educational cluster and distributed by occupational cluster[1/]

Occupational Cluster	Educational Cluster											
	General Home Economics	Business	Family and Community Services	Family/ Consumer Resource Management	Food Service Management and Institutional Management	Food Science and Human Nutrition	Home Economics Communications	Home Economics Education	Human Environment and Shelter	Individual and Family Development	Textiles and Clothing	Total
Administrators and Managers	10	499	7	76	1,985	127	0	161	197	605	430	4,097
Design, Manufacturing and Processing Specialists	65	928	--	--	761	776	--	--	790	--	890	4,210
Marketing, Merchandising and Sales Personnel	331	3,488	7	730	328	481	91	378	982	484	4,909	12,209
Media Specialists	8	561	--	155	259	204	114	161	375	12	175	2,024
Scientific and Professional Specialists	15	65	--	25	600	3,911	--	3	197	--	16	4,832
Service Specialists	95	--	81	1,089	503	1,960	12	145	393	2,419	--	6,697
Educators	146	305	30	406	329	570	12	3,112	422	4,587	460	10,379
Other	132	464	10	672	405	1,787	12	1,017	393	1,812	1,468	8,172
Return to native country												
Continue education												
Elect not to enter labor force												
Take job unrelated to education												
Total	802	6,310	135	3,153	5,170	9,816	241	4,977	3,749	4,919	8,348	52,620

-- = No degree specializations assigned to occupational cluster.

0 = No graduates anticipated.

[1/] Based on NCES projections methodology.

Appendix 16--Methodology used to analyze current and projected employment in the Cooperative Extension Services

SEA-Extension, USDA, maintains a continuous master personnel file of the Cooperative Extension Services professional employees. The data in this file were reviewed January 1980, for the purposes of--

1. Placing Cooperative Extension personnel into two employment categories: agriculture and home economics.

   a. Individuals were categorized as agricultural personnel when--

      (1) Their first and latest degrees represented a specialization in agriculture,

      (2) Their latest degree represented a specialization in agriculture, or

      (3) Their first degree represented a specialization in agriculture and their latest degree represented any specialization other than home economics.

   b. Individuals were categorized as home economics personnel when--

      (1) Their first and latest degrees represented a specialization in home economics,

      (2) Their latest degree represented a specialization in home economics, or

      (3) Their first degree represented a specialization in home economics and their latest degree represented any specialization other than agriculture.

   c. Remaining personnel, without degrees and with first and latest degrees representing specializations other than agriculture or home economics, were allocated proportionately to agriculture and to home economics.

2. Assessing 1979 levels of employment for agriculture personnel and for home economics personnel by position and by area and responsibility.

3. Assessing 1970/79 annual replacements because of death, retirement, voluntary separation, or involuntary separation.

In addition to reviewing the master-personnel file, estimates were developed by SEA-Extension for annual employment demand in the Cooperative Extension Services because of growth through 1985. These percentage estimates and derived computations are shown in the following tabular display. Projected annual employment demand because of growth and estimated annual replacements were summed to derive estimates for average annual openings.

Appendix 16--Methodology used to analyze current and projected employment in the Cooperative Extension Services--Continued

Item	Growth estimates by employment category			
	Agriculture		Home economics	
	Percent	Frequency	Percent	Frequency
Total growth	3.25	396	2	130
Position growth:				
Area agent	10.00	60	10	13
County or local agent	60.00	200	80	104
State specialist	30.00	136	10	13
Supervisor	--	--	--	--
Other	--	--	--	--
Total	100.00	396	100	130
Area of responsibility growth:				
Agriculture and natural resources	50.00	198	--	--
Community and resource development	15.00	59	12	16
Home economics and family living	10.00	40	70	91
4-H and youth	25.00	99	18	23
Administration	--	--	--	--
Undesignated	--	--	--	--
Total	100.00	396	100	130

* U.S. GOVERNMENT PRINTING OFFICE: 1981 - 340-932/SEA-68